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CONTRACTIONS OF TITLES.

The following is a list of the contractions and the corresponding full titles of Journals from which abstracts are most frequently prepared for the "Pharmaceutical Journal." The titles prefixed by an asterisk (*) are those of official Journals.

Amer. Drugg. = American Druggist. New York. Semi-Monthly.

Amer. Journ. Pharm. = American Journal of Pharmacy. Philadelphia. Monthly.

Annalen = Justus Liebig's Annalen der Chemie. Leipzig. Monthly.

Annales de Chim. Analyt. = Annales de Chemie Analytique. Paris. Monthly.

* *Apot. Zeit.* = Apotheker-Zeitung. Organ of the Deutsche Apotheker-Verein. Berlin. Twice a week.

* *Apot. Zeit. Rep.* = Repertorium der Pharmacie. Supplement to the Apotheker-Zeitung.

* *Archiv* = Archiv der Pharmacie. Berlin: J. Greiss. Monthly.

* *Berichte* = Berichte der deutschen chemischen Gesellschaft. Berlin. Once or twice a month.

Berichte Pharm. = Berichte der deutschen pharmaceutischen Gesellschaft. Berlin. Monthly.

* *Brit. Med. Journ.* = British Medical Journal, London. Weekly.

Bull. Com. = Bulletin Commercial. Supplement to L'union Pharmaceutique. Paris: Pharmacie Centrale de France. Monthly.

Bull. Gén. de Therapeut. = Bulletin Général de Therapeutique. Paris. Weekly.

* *Can. Pharm. Journ.* = Canadian Pharmaceutical Journal. Toronto. Monthly.

Cape Agricul. Journ. = Agricultural Journal, Cape of Good Hope, Cape Town. Fortnightly.

Chem. Central Blatt = Chemisches Central Blatt. Berlin Weekly.

Chem. News. = Chemical News. London. Weekly.

Chem. Zeit. = Chemiker Zeitung. Cöthen. Twice a week.

Chem. Zeit. Rep. = Chemisches Repertorium. Supplement to the Chemiker Zeitung.

* *Comp. rend.* = Comptes rendus des séances de l'Académie des Sciences. Paris: Gauthier-Villars. Weekly.

Deuts. Am. Apot. Zeit. = Deutsch Americanische Apotheker Zeitung. New York.

Gard. Chron. = Gardener's Chronicle. London. Weekly.

Journ. Amer. Chem. Soc. = Journal of the American Chemical Society. Easton, Pa. Monthly.

* *Journ. Chem. Ind.* = Journal of the Society of Chemical Industry. Monthly.

Journ. de Pharm. d'Anvers = Journal de Pharmacie Organe de la Société de Pharmacie d'Anvers. Anvers. Monthly.

* *Journ. Pharm. Chimi* = Journal de Pharmacie et de Chimie Paris: G. Masson. Twice a month.

Journ. Zahnheil. = Journal für Zahnheilkunde. Berlin.

Med. Press = Medical Press and Circular. London: A. A. Tindall. Weekly.

Mod. Med. = Modern Medicine and Bacteriological Review. Battle Creek, Mich., U.S.A. Monthly.

Mon. Scient. = Moniteur Scientifique. Paris. Monthly.

Münch. Med. Woch. = Münchener Medicinische Wochenschrift. Munich. Weekly.

Nat. Drugg. = National Druggist, New York. Monthly.

Nouv. Rem. = Les Nouveaux Remèdes. Paris. Twice a month.

Osterr. Zeits. für Pharm. = Zeitschrift des allgem. osterreich. Apotheker-Vereines. Wien. Weekly.

Pediat. = Pediatrics. London and New York. Twice a month.

Pharm. Centralh. = Pharmaceutische Centralhalle. Dresden. Weekly.

Pharm. Post = Pharmaceutische Post. Vienna. Weekly.

Pharm. Woch. = Pharmaceutische Wochenschrift. Berlin. Weekly.

Pharm. Zeit. = Pharmaceutische Zeitung. Berlin: J. Springer. Twice a week.

* *Proc. Chem. Soc.* = Proceedings of the Chemical Society. London. About twice a month.

Répertoire = Répertoire de Pharmacie, Archives de Pharmacie et Journal de Chimie Médicale Réunis. Paris. Monthly.

Rev. Med. Pharm. = Revue Medico-Pharmaceutique. Paris. Monthly.

Scient. Amer. = Scientific American. New York. Weekly.

Schweiz. Woch. = Schweizerische Wochenschrift für Chemie und Pharmacie. Zurich. Weekly.

Therap. Monats. = Therapeutische Monatshefte. Berlin.

Union Pharm. = L'union Pharmaceutique. Paris: Pharmacie centrale de France. Monthly.

Wien. Klin. Rund. = Wiener Klinische Rundschau. Vienna: A. Hölder.

Zahn. Rund. = Zahnaertliche Rundschau. Berlin.

Zahntech. Reform. = Die Zahntechnische Reform. Berlin: R. F. Funcke.

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Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

PHOSPHORUS SUBOXIDE. K. C. Browning has investigated the following methods used to prepare so-called phosphorus "suboxide":—(*a*) Oxidation of phosphorus, both in the solid state and in solution, by air diluted with carbon dioxide; (*b*) the action of metals on phosphorus oxychloride; (*c*) the action of acetic anhydride on sodium hypophosphite. The results obtained confirm, on the whole, those of Chapman and Lidbury and of Burgess and Chapman, although the author believes that the suboxide can exist under certain conditions.—*Proc. Chem. Soc.*, **17**, 243.

DETERMINATION OF CADMIUM. E. H. Miller and R. W. Page have made a comparison of various methods for the quantitative determination of cadmium, and find that the electrolytic determination of the metal is most accurate and satisfactory, provided a large excess of potassium cyanide and the presence of other salts are avoided. The carbonate method was found to be most troublesome and least accurate, while Austin's method proved unsatisfactory, and it is recommended that the use of asbestos filters should be avoided on account of the solvent action of either ammonium phosphate or nitric acid. It is stated that cadmium ammonium phosphate contains one molecule of water of crystallisation, and can be dried without decomposition at 100° to 103° C. Cadmium can be determined with great accuracy by precipitating in the cold, in a neutral solution by a large excess of $(NH_4)_2HPO_4$, and allowing to stand over night; it can be weighed on balanced filters or ignited to pyrophosphate. If precipitated in a boiling solution or on prolonged boiling it is liable to change in composition and gives low results. This method is recommended as preferable to the carbonate method in all respects, and though no more accurate than the electrolytic method it has the practical advantage of requiring no extraordinary or expensive apparatus.—*Chem. News*, **84**, 312.

ASSAY OF OPIUM. W. Stoeder thus modifies the accepted processes for the assay of opium. The drug operated on should be previously dried at 50° C., not 60°, as required by the Ph.G. IV. Thus dried it should yield to water not less than 50 per cent. of its weight of dry extractive, and should yield at least 10 per cent. of morphine when assayed by the following process. 3 Gm. of the dry powder is mixed with calcium hydrate, 0·5 Gm., and water, 10 Gm., more water being added to bring the total weight to 32 Gm. The mixture is allowed to macerate for two hours with frequent agitation, then 20 Gm. is filtered off, equivalent to 2 Gm. of the original powder. To this filtrate, ether, 10 C.c., and benzole, 5 drops, are added, and the whole well mixed by agitation; ammonium chloride, 0·2 Gm., is then added, and the mixture well shaken frequently at intervals for an hour. The ethereal layer is then withdrawn and replaced by another 10 C.c. of that solvent, the mixture being again frequently shaken. This ether is removed, the precipitated morphine collected and washed with water until a drop of the washings no longer colours phenol-phthalein solution. The morphine is then dissolved in 20 C.c. of N/10 H_2SO_4 solution, the filter being washed until quite free from alkaloid and acid, and the free acid titrated back with N/10 alkali, using hæmatoxyllin as the indicator. From the amount of acid, combined with the morphine, the amount of anhydrous alkaloid is calculated from the molecular weight 285 for anhydrous morphine. *Extract of Opium* is assayed by taking 1·5 Gm. of the extract, rubbing down with 0·5 Gm. of calcium hydrate and 10 C.c. of water, adjusting the total weight to 30·5 Gm.; allowing to stand for two hours with frequent agitation, then filtering off 20 Gm. (equivalent to 1 Gm. of extract) and treating as described under opium. It should contain 18 per cent. of morphine. *Tincture of Opium.*—15 Gm. of the tincture is evaporated on the water-bath to 5 Gm. With this calcium hydrate 0·25 Gm. is mixed and sufficient water to make up the weight to 15·25 Gm. After frequent shaking for two hours, 10 Gm. of filtrate is collected. This is then treated in the same manner as described for the extract, using, however, half quantities of the reagents and solvents.—*Pharm. Centralh.*, **42**, 518, after *Pharm. Weekblad.*

SUBLIMED SULPHUR. Norman Leonard criticises the Pharmacopœia statement that "sublimed sulphur should not have any action on litmus," and states that in his experience it is rare to meet with specimens quite devoid of acidity. Samples examined by the author were found to contain from 0·02 to 0·25 per cent. of sulphuric acid. He considers that part of the acidity may be due to oxidation in the process of sublimation, but it may also be formed by exposure to air and moisture. A specimen of sulphur thoroughly washed and dried at 100° C., showed scarcely any acid reaction after four years, whereas, a sample kept moist, contained 0·2 per cent. of sulphuric acid after the same length of time. The author is "not aware that the slow oxidation of sulphur in this way has been previously noticed." It should be noted, however, that the slow oxidation of finely divided sulphur is referred to in some elementary text-books of chemistry.—*Analyst*, **26**, 319.

FRUIT OF THE COCO-NUT. A. L. Winton gives an elaborate account of the anatomical character of the fruit of *Cocos nucifera*. The cells of the endoderm contain bundles of needles of "fat crystals," and lumps of proteid matter, each lump containing, as a rule, a single crystalloid.—*American Journal of Science*, 1901, p. 265.

VEGETABLE POWDERS AND THEIR DIAGNOSTIC CHARACTERS.

BY PROFESSOR HENRY G. GREENISH AND EUGÈNE COLLIN.

Section 3.--Powdered Leaves.*

STRAMONIUM LEAVES.

The leaves of *Datura stramonium*, Linn. (N.O. Solanaceæ).

The epidermis of the upper surface of the leaf closely resembles that of the lower surface. Both are composed of cells with undulating or sinuous walls and bear stomata and simple as well as glandular hairs.

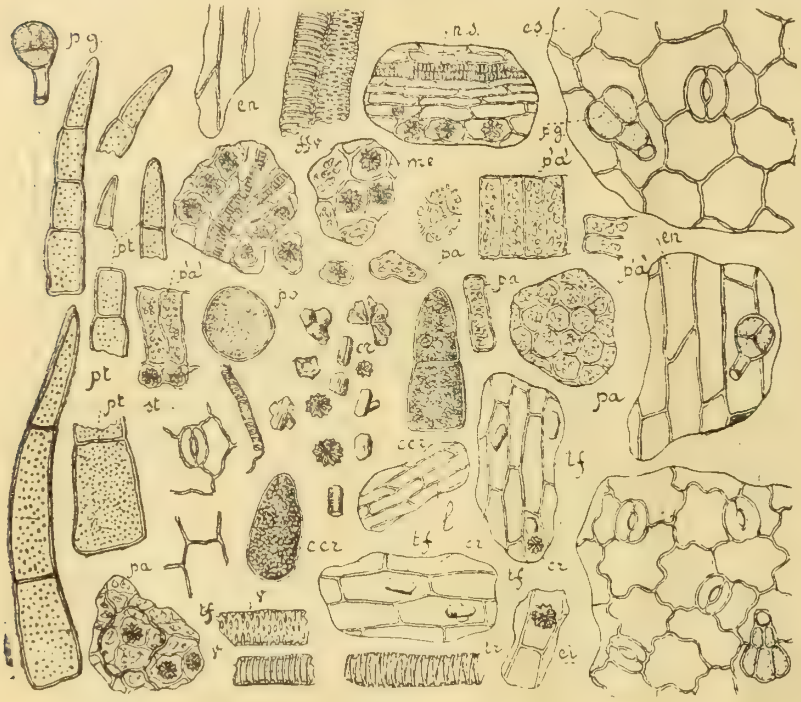


FIG. 43.—STRAMONIUM LEAVES.

POWDERED STRAMONIUM LEAVES.—*cr*, crystals; *ccr*, crystal cells; *ei*, lower epidermis; *en*, neural epidermis; *es* upper epidermis; *ffv*, débris of fibrovascular bundles; *l*, bast; *me*, spongy parenchyma *pa*, *p'a'*, palisade tissue *pg*, glandular hairs; *po*, pollen grains; *pt*, simple hairs; *tf*, cortical tissue of midrib; *tr*, *v*, tracheids and vessels.

The stomata are surrounded by three (or sometimes four) cells, one of which is smaller than the others, an arrangement that is common in solanaceous leaves.

The simple hairs are *uniserial*, and *conical;* they are composed of from three to five cells, the walls of which are *warty* and not very thick.

The glandular hairs are short; the gland is oval, pluricellular, and borne upon a little pedicel.

The mesophyll is heterogeneous and asymmetrical. Both the palisade tissue and the spongy parenchyma contain simple prismatic crystals as well as cluster crystals of calcium oxalate.

The midrib is convex above and very convex below; the wood is strongly curved and there is a layer of bast above as well as below it. Neither bast nor pericycle contain any lignified elements. In addition to prismatic and cluster crystals of calcium oxalate the cortical tissue of the midrib contains cells filled with sandy crystals; these cells are large and often superposed.

The diagnostic characters of stramonium leaves are (*a*) *the characteristic hairs;* (*b*) *the very numerous cluster crystals in the interneural mesophyll;* (*c*) *the stomata of solanaceous type;* (*d*) *absence of pericyclic fibres.*

TEA.

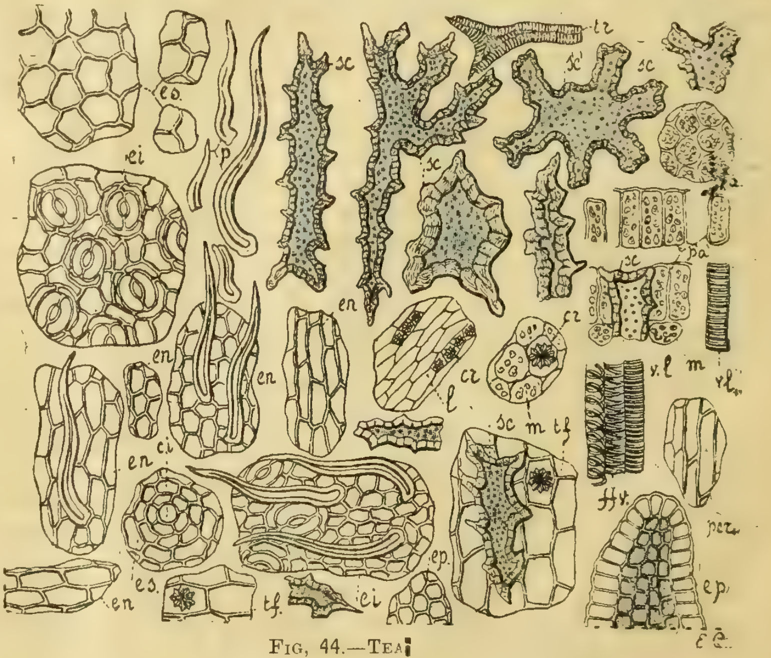
The leaves of *Camellia thea*, Link. (N.O. Ternstrœmiaceæ).

The upper epidermis is composed of cells with undulating walls and covered with a rather thick cuticle. The lower epidermis consists of smaller cells and is alone provided with stomata; the latter are surrounded by three or four tangentially elongated cells.

Simple hairs occur on both surfaces of the leaf, but they are more abundant on the lower; the number, however, varies with the variety of tea, and with the age of the leaf; they are unicellular, tapering and rather thick walled, varying very much in length, but often attaining 500-700μ.

The mesophyll is heterogeneous and asymmetrical. It is characterised by the presence of a large number of *sclerenchymatous idioblasts*. These are more or less branched and warty and often extend transversely from the upper to the lower epidermis. They vary very much in shape and in the thickness of the walls. The cells of the spongy parenchyma contain cluster crystals of calcium oxalate.

The midrib is biconvex. Under each epidermis there is a layer of collenchyma of varying thickness. The wood is arched and the *bast contains crystals of calcium oxalate.* The meristele is surrounded by a pericycle consisting of slightly lignified cells arranged in circle. The cortical tissue contains idioblasts which are usually rather larger and more branched than those of the mesophyll.



FIG, 44.—TEA.

POWDERED TEA.—*cr*, crystals; *ei*, lower epidermis; *en*, neural epidermis; *ep*, apex of marginal tooth; *es*, upper epidermis; *ffv*, debris of fibrovascular bundles; *l*, *bast with cluster crystals;* *m*, spongy parenchyma; *p*, simple hairs; *pa*, *p'a'*, palisade cells, *per*, pericyclic, slightly lignified; *sc*, *idioblasts from the mesophyll* and *cortical tissue;* *s'c'*, *idioblasts from the pith of the stem;* *tf*, cortical tissue; *tr*, tracheids; *vl*, vessel.

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* Concluded from last volume, page 456.

The little fragments of the stems, which are often to be found in ordinary tea, have a slightly different structure. The wood in them forms a circle within which there is a pith containing branched idioblasts; these have comparatively thin, pitted walls.

The diagnostic characters of tea are (*a*) *the characteristic hairs*; (*b*) *the sclerenchymatous cells, especially in petiole and midrib*; (*c*) *the stomata surrounded by tangentially elongated cells*; (*d*) *the calcium oxalate in cluster crystals.*

BOLDO LEAVES.

The leaves of *Pneumus boldo*, Mol. (N.O. Monimiaceæ).

The upper epidermis is composed of polygonal cells with rather thick and wavy walls. Below the epidermis there is a hypoderma consisting of a single or sometimes double layer of cells resembling those of the epidermis, but with rather thicker walls.

The lower epidermis alone is furnished with stomata; these are slightly raised and surrounded by four or five cells, of which one or sometimes two are smaller than the others. Both upper and lower epidermis bear simple hairs which are usually stellate, although here and there a very long unicellular hair can be found.

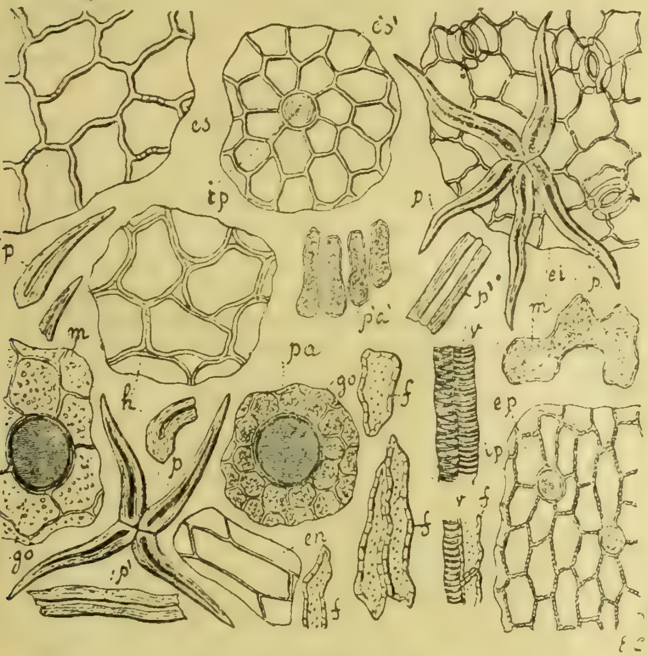

FIG. 45.—BOLDO LEAVES.

POWDERED BOLDO LEAVES.—*ei*, lower epidermis; *en*, neural epidermis; *ep*, epidermis of petiole; *es*, upper epidermis; *e's'*, upper epidermis with scar of hair *ip*; *f*, lignified cells; *go*, oil-cells; *h*, hypoderm; *m*, spongy parenchyma; *p*, stellate hairs, entire or broken; *p'*, fragment of a one-celled hair; *pa*, *p'a'*, palisade cells; *v*, vessels.

The mesophyll is heterogeneous and asymmetrical; it is well characterised by the presence of large oil-cells.

The midrib is concavo-convex. Below the wood there is a soft bast and a fibrous pericycle; above it there is a fibrous tissue in which two small inverted lateral bundles are sometimes to be found (near petiole). The cortical portion of the midrib contains numerous oil-cells.

The diagnostic characters of boldo leaves are (*a*) *the epidermis and hypoderma*, (*b*) *the very characteristic hairs*, (*c*) *the presence of large oil-cells.*

BUCHU LEAVES.

The leaves of *Barosma betulina*, Bart. and Wendl. (N.O. Rutaceæ).

The epidermis of the upper surface consists of polygonal cells, nearly every one of which contains sphærocrystalline masses or feathery tufts of hesperidin; these dissolve in caustic potash with the production of a yellow colour. The cells also contain mucilage which is deposited on the inner side of the inner tangential wall.

The epidermis of the under surface is composed of similar cells, which also contain hesperidin, but less mucilage. Both surfaces are glabrous save for the occasional occurrence of a short, one-celled, thickwalled conical hair near the midrib.

The mesophyll is heterogeneous and asymmetrical; it contains rosette crystals of calcium oxalate and here and there a large oil-gland.

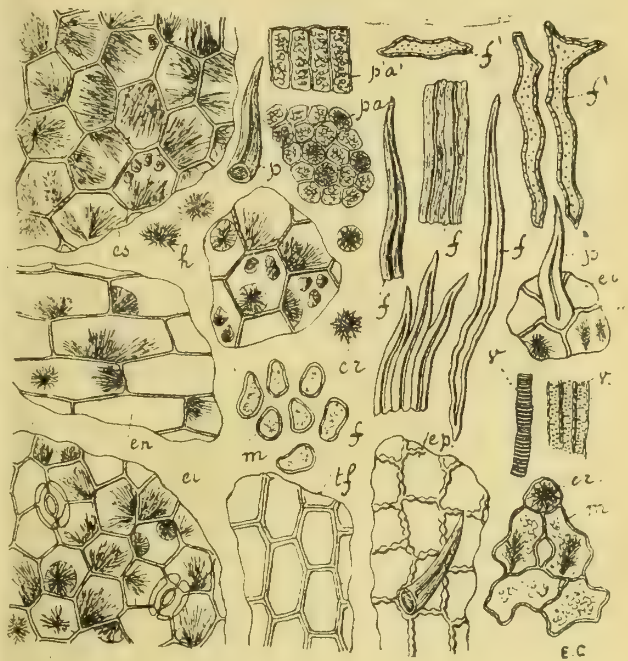

FIG. 46.—BUCHU LEAVES.

POWDERED BUCHU LEAVES.—*cr*, calcium oxalate in rosettes; *ei*, lower epidermis with crystals of hesperidin; *en*, neural epidermis; *ep*, epidermis of petiole; *es*, upper epidermis; *f*, pericyclic fibres; *f'*, fibrous cells from veinlets; *h*, hesperidin; *m*, mesophyll; *p*, protective hairs; *pa*, *p'a'*, palisade cells; *tf*, cortical tissue of midrib; *v*, vessel.

The midrib is concavo-convex in section. The wood is fan shaped; below the bast there is a crescent of pericyclic fibres which vary in the extent of their thickening and lignification. In the cortical tissue, which contains but little collenchyma, there is often a large oil-gland.

The diagnostic character of buchu leaves are (*a*) *the polygonal cells of the epidermis with crystalline masses of hesperidin*; (*b*) *the abundance of mucilage*; (*c*) *the presence of pericyclic fibres*; (*d*) *the calcium oxalate in rosettes.*

BEARBERRY LEAVES.

The leaves of *Arctostaphylos Uva-ursi*, Sprengel (N.O. Ericaceæ).

The upper epidermis is composed of polygonal cells with slightly wavy walls, covered by a thick cuticle; they measure from 25 to 40μ either in length or width. The lower epidermis is furnished with very large stomata, surrounded by four, five, or six cells, which, however, are devoid of any regularity in their arrangement. Both short simple hairs and glandular hairs are occasionally to be found, but they are often rare. The former are one-celled and conical; the latter have a short two-celled pedicel upon which a large pluricellular oval gland is borne; the gland is divided by horizontal and vertical walls into several cells.

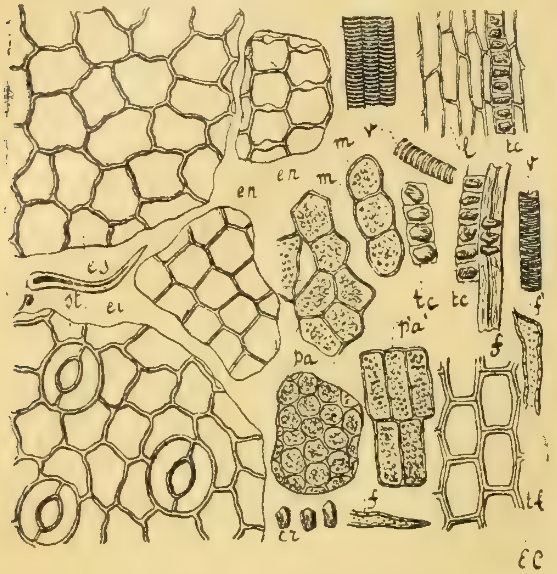

FIG. 47.—BEARBERRY LEAVES.

POWDERED BEARBERRY LEAVES.—*cr*, prismatic crystals; *ei*, lower epidermis; *en*, neural epidermis; *es*, upper epidermis; *f*, wood fibres, from midrib; *f'*, wood fibres, with small veins; *l*, bast; *m*, spongy parenchyma; *pa*, *p'a'*, palisade cells; *tc*, crystal cells in rows; *tf*, cortical tissue of midrib; *v*, vessels.

The mesophyll is heterogeneous, asymmetrical and destitute of internal glands. The midrib is plano-convex. The wood is fan-shaped, strongly curved below, but only slightly above; the bast passes gradually into a cortical tissue composed of more or less distinctly axially elongated collenchymatous cells. Both in this tissue and in the bast there are superposed rows of small cells, or axially elongated cells containing crystals of calcium oxalate; these may be prismatic or cluster crystals, both forms being frequently found in the same (elongated) cell.

The diagnostic characters of bearberry leaves are (*a*) *the lower epidermis with very large stomata*, (*b*), *the crystal cells of the cortical tissue.*

SAGE LEAVES.

The leaves of *Salvia officinali*, Linne. (N.O. Labiatæ).

The upper epidermis is composed of cells with slightly undulating walls; on the lower surface they are rather more sinuous. Both surfaces are provided with stomata as well as with simple and glandular hairs.

The stomata are enclosed between two crescent-shaped cells at right angles to the ostiole; this arrangement is common in labiate leaves.

The simple hairs are usually long and undulating; they are composed of two or three cells, the terminal one gradually tapering to a whip-like point.

The glandular hairs vary in structure. Some consist of a unicellular rounded gland, supported upon a unicellular or bicellular pedicel; in others the gland is large, octocellular and sessile. The mesophyll is heterogeneous and devoid of crystals; the midrib is concavo-convex, and there are no lignified elements in either bast or pericycle.

The diagnostic characters of sage leaves are (*a*) *the position of the stomata*; (*b*) *the characteristic hairs and glands*; (*c*) *the absence of calcium oxalate crystals*; (*d*) *the absence of pericyclic fibres.*

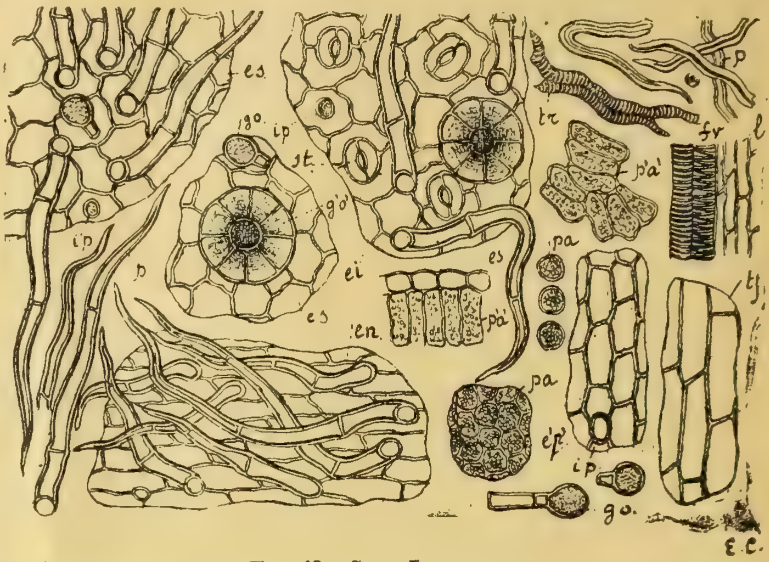

FIG. 48.—SAGE LEAVES.

POWDERED SAGE LEAVES.—*ei*, lower epidermis; *en*, neural epidermis; *e'p'*, epidermis of petiole; *es*, upper epidermis; *fv*, vessels from midrib; *go*, *unicellular gland; g'o'*, *octocellular gland; ip*, scar of hair; *p*, *simple hairs; pa*, *p'a'*, palisade cells; *st*, stomata with the *ostiole at right angles to the wall separating two cells from one another; tf*, cortical tissue of midrib; *tr*, tracheids.

HENNA LEAVES.

The leaves of *Lawsonia inermis*, Linn. (N.O. Lythrarieæ).

The epidermis of both surfaces is provided with stomata, which are surrounded by four or five cells; these cells, however, exhibit

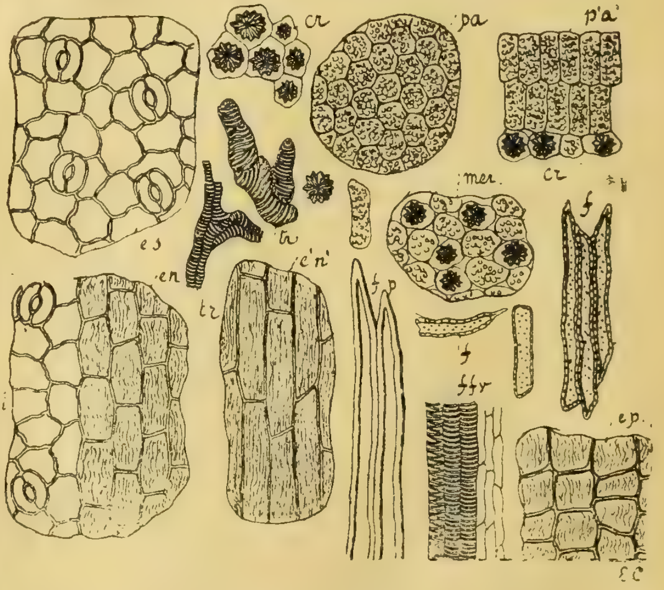

FIG. 49.—HENNA LEAVES.

POWDERED HENNA.—*cr*, crystals of calcium oxalate; *ei*, lower epidermis; *en*, neural epidermis; *e'n'*, epidermis of midrib; *ep*, epidermis of petiole; *es*, upper epidermis; *f*, lignified cells of larger veins; *ffv*, débris of midrib; *fp*, fibres from petiole; *mer*, spongy parenchyma; *pa*, *p'a'*, palisade cells; *tr*, tracheids.

no regularity in their arrangement. The cuticle is thin on the under surface and especially above the veins it is striated.

The mesophyll is heterogeneous and symmetrical. There are two rows of palisade cells on either surface, and the lower part of the spongy parenchyma, which is composed of ellipsoidal, rounded or cylindrical cells, is very rich in large cluster-crystals of calcium oxalate.

The midrib is plano-convex. The wood is curved, and exhibits a layer of bast above as well as below. Between the last and the lower epidermis there is a well developed arc of pericyclic fibres. The cortical tissue of the midrib is also rich in large cluster-crystals of calcium oxalate.

The powder often contains the débris of twigs, etc.

RECENT MATERIA MEDICA.*

Echinasia angustifolia, N.O. Compositæ.—The root is used in North America as a remedy for snake bites. It is a sialagogue, antiseptic, and aphrodisiac. Also given in malaria and typhoid.

Echtol.—A proprietary antiseptic, stated to be a mixture of fluid extract of *Thuja* and of *Echinacea angustifolia*.

Egols.—Ortho-nitro-para-sulphonates of phenol, cresol, and thymol, in combination with mercury and potassium.

Eigones.—Iodo-albumin compounds. Externally used as iodoform substitutes, and internally to replace the alkaline iodides. Bromeigones are analogous bodies, in which bromine replaces the iodine of ordinary eigones.

Eka-Iodoform.—A mixture of iodoform with paraform aldehyde. Stated to be more efficacious than iodoform.

Elepizone.—A proprietary article for epilepsy, a mixture of alkaline bromides. Dose.—1 to 4 drachms, daily.

Elosin.—Tonic diuretic and anthelmintic resinoid obtained from *Chamadirum luteum.*

Emetine.—Pure alkaloid. Expectorant, emetic. Dose.—As an emetic, $\frac{1}{12}$ to $\frac{1}{6}$ grain; as an expectorant, $\frac{1}{60}$ to $\frac{1}{30}$ grain.

Enterol.—A mixture of three isomeric creosols similar to the physiological products found in the intestines. Intestinal antiseptic. Dose of a 1 per mille aqueous solution, 15 to 75 minims per diem.

Enophthalmine.—Oxytoluylmethylvinyl-diacetone-alkamine hydrochloride. 2 to 5 per cent. solution as mydriatic. When first introduced erroneously named Euopthalmine.

Enterose.—Dietetic preparation for nutritive purposes.

Eosolic Acid and Salts.—Calcium eosolate, $Ca_3\ 2(C_9H_7S_3O_{12})$, given in phthisis and other affections. Antiseptic germicide. Dose.—½ to to 1 grain. Silver eosolate used in gonorrhœa. Quinine eosolate in treatment of malaria.

Eosote.—Creosote valerianate. Odourless substitute for creosote. Dose in capsules each containing 3 grains, from 3 to 9 capsules per diem.

Ephedra nevadensis, N.O. Gnetaceæ.—A herb indigenous to California. Recommended as a tonic and blood purifier; also in the form of an infusion, in gonorrhœa.

Epicarine.—Beta-oxynaphthyl-o-oxy-meta-toluic acid. Antiseptic. Practically non-toxic and non-irritant. Suitable for internal administration.

Epidermin.—A basis for skin medication.

Epidermine.—A mixture of fluorxylene and difluordiphenyl. Antiseptic.

Epigea repens.—Diuretic. Superior to buchu. Dose, of tincture, 20 to 40 minims.

Epinephrine.—The alkaloidal and hæmostatic principle $C_{17}H_{15}NO_4$, of the supra-renal capsules. Not stable in the form of salts.

Erodium cicutarium.—Remedy for menstrual disorders. Dose, of infusion (15 in 180), a teaspoonful every hour.

Eryngium aquaticum.—Febrifuge, emmenagogue and hydragogue. The root is a powerful sudorific, sialagogue, and in large doses, emetic. Dose, of tincture, 1 : 5, 15 to 75 minims.

Erythrina corallodendron.—Hypnotic and sedative, also purgative. Dose, of alcoholic extract, 7½ grains, repeated. Also given hypodermically in doses of 1 C.c. of 1 per cent. aqueous solution of the extract.

Erythrol.—Double iodide of bismuth and cinchonidine. Externally as iodoform substitute. Internally in acid dyspepsia with butyric fermentation. Dose.—1½ to 3 grains.

Erythrol.—Nitro-erythromannite. Anti-asthmatic. Dose.—¼ to 1 grain. To be distinguished from the preceding body of the same name.

Erythrol Tetranitrate.—Vaso-motor dilator and anti-spasmodic. Dose.—½ grain in tablet form.

Esanofele.—Proprietary pills for malaria, containing quinine hydrochloride, 1½ grain, ferric citrate, ½ grain, and arsenious acid, 1/64 grain.

Eseridine.—An alkaloid of *Physostigma*, said to be less toxic than eserine.

Eserine Salicylate.—Myotic; spinal depressant, anti-tetanic. Dose.—1/120 to 1/30 grain, not to exceed 1/20 grain.

Ethacol.—Pyrocatechol mono-ethyl ester.

Ethidene Dichloride.—Anæsthetic by inhalation, substitute for chloroform.

Ethoxy-ana-mono-benzoyl-amido-quinoline.—See Analgene.

Ethoxy-phenyl-succinimide.—See Pyrantine.

Ethoxy-phenyl-urethane.—See Thermodine.

Ethyl-morphine Hydrochloride.—See Dionine.

Ethyl-Urethane.—See Urethane.

Ethyl-amygdo-phenine.—A derivative of par-amido-phenol. Antipyretic, analgesic, anti-rheumatic. Dose.—7½ grains.

Ethyl Bromide.—Local anæsthetic, spray. Internally nerve sedative. Dose.—5 to 10 minims, in capsules or on sugar. To be distinguished from Ethylene Bromide, which is *poisonous.*

Ethylene Bromide.—Sedative, in epilepsy. To be distinguished from ethyl bromide. Dose.—1 to 2 minims per diem in capsules or emulsified. To be given with caution.

Ethylene-Diamine-Cresol.—See Cresamine.

Ethylene-diamine-silver Phosphate.—See Argentamine.

Ethylene-ethenyl-diamine.—See Lysidine.

Ethylene Periodide; Diiodoform, C_2I_4.

Ethylenimine.—Piperazine.

Ethylol.—Ethyl chloride.

Eubiol.—An odourless soluble dried preparation of hemoglobin.

Eubiol Liquid.—A solution of the above in an equal volume of glycerin.

Eucaine A.—Methyl ester of methyl-benzoyl-tetra-methyl-γ-hydroxypiperidine-carbonic-acid hydrochloride. Anæsthetic. Stated to be superior to cocaine, not decomposed by boiling. Given hypodermically in doses of 1 C.c. of a 1 or 2 per cent. solution.

Eucaine B.—Benzoyl-vinyl-diacetonalkamine hydrochloride, Anæsthetic. More soluble and more efficacious than eucaine A. Employed in 2 per cent. solution.

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* Continued from last volume, page 584.

Eucalypteol.—Eucalyptene (Dextropinene) hydrochloride. Dose.—15 to 24 grains per diem.

Eucalyptol Phosphate.—Internal antiseptic. Dose.—1 to 4 grains.

Eucaseine.—Combination of casein with ammonia; soluble nutrient.

Eucasol; Eucalyptol-Anytol.—Powerful antiseptic. Employed in 1 or 2 per cent. solutions.

Eudermol.—Nicotine salicylate. Remedy for itch and other parasitic diseases of the skin. Applied as a 1 : 1,000 ointment.

Eudoxine.—Bismuth nosophene. Combination of bismuth oxide with tetra-iodophenol-phthalein. Intestinal disinfectant. Dose.—3½ to 5 grains, repeated. In intestinal catarrh of children from ½ to 3 grains according to age.

Eugallol. — Pyrogallol monoacetate. Powerful irritant. Soluble in acetone. Employed in skin affections.

Eugastrin.—Stated to be the active principle of condurango bark. Remedy for tuberculosis.

Eugenic Acid.—See Acid Caryophyllic.

Eugenoform.—Eugenol-carbinol sodium. Sodium compound of the product of the action of formaldehyde on eugenol. Intestinal disinfectant. Dose.—17½ to 15 grains, twice daily.

Eugenol.—See Acid Caryophyllic.

Eugenol Benzoate.—See Benzo-eugenol.

Eugoform.—An iodoform substitute, obtained by the action of formaldehyde on guaiacol and subsequent acetylisation. A fine greyish-white almost odourless powder. Anæsthetic and antiseptic. Employed as a dusting powder.

Eugol.—Proprietary antiseptic containing β-naphthol, salol, menthol, boric acid, and a trace of formalin.

Eulactol.—An artificial nutrient consisting of milk sugar, casein, egg-albumin and vegetable albumin.

Eulyptol.—Proprietary disinfectant. Mixture of eucalyptus oil, salicylic acid and phenol.

Eumenol.—Fluid extract of the root of Tangkui. A remedy for amenorhœa. Dose.—½ to 1 drachm.

Eunatrol.—Sodium oleate. Used for hepatic colic and gall stones.

Eunol, α and β.—Combinations of eucalyptol with α- and β-naphthol respectively. Antiseptic for wounds.

Eupatorium saturæfolium.—Guaco. Alterative; remedy for snake bites, intermittent fevers, rheumatism, etc. Dose.—15 to 45 minims of fluid extract; of tincture (1 : 6), 30 to 60 minims.

Euphorine, $C_9H_{11}NO_2$. — Phenyl-urethane. Antithermic, lowers temperature without affecting the heart. Also analgesic. Dose, 3 to 6 grains, repeated up to 15 to 20 grains per diem.

Eupyrine. — Vanillin-ethyl-carbonate-para-phenitidine. A mild non-toxic antipyretic especially suitable for children. Dose.—15 to 20 grains in twenty-four hours.

Euquinine.—Quinine-ethyl-carbonic ester—

$$C_{20}H_{23}N_2O{\cdot}COO_2C_2H_5.$$

Tonic antiperiodic. Dose.—4 to 30 grains in twenty-four hours.

Euresol.—Resorcin monoacetate. Used in skin diseases.

Eurobin.—Chrysarobin triacetate. Dermatological remedy. Less irritant than chrysarobin. Employed in a 2 or 3 per cent. ointment.

Europhene.—Isobutyl-ortho-cresol iodide. Iodoform substitute.

Eurythrol.—Spleen extract. Remedy for anæmia. Dose.—1 to 3 teaspoonfuls daily.

PHOTOGRAPHIC NOTES.

BY A PHARMACEUTICAL CHEMIST.

Photographic Nomenclature.—Since the introduction of the word "Kodak" into photography it is somewhat regrettable that it seems necessary for trade purposes that some manufacturers should attach an equally silly and meaningless coined word to any new form of camera or other photographic apparatus produced by them. I cannot quite see the necessity for this in regard to such apparatus any more than to a microscope or any other form of scientific instrument. One can understand it in the case of quack proprietary medicines of secret composition. The origin and meaning of the word "Kodak" has been frequently the subject of speculation; can it have been selected from the projected universal language called "Volapuk," of which we have heard nothing for some years, and is probably defunct? The spelling and construction seem to bear some similarity. The advertised name of the new stereoscopic camera by the same company seems, if it can be, more silly still. Such a title as "Stereo-weno" is very suggestive of one's nursery days, when we were told that a horse was a "gee-gee" and a dog a "bow-wow," and is not particularly complimentary to the common sense of the prospective users of the instrument. If it be necessary to apply a distinctive name to a camera, by all means let it be done, but let that name be in some way descriptive and an appropriate and recognisable English word or phrase.

Mounting Stereographic Prints.—A friend has recently brought to my notice a novel (at least, to me) and effective method of mounting stereographic prints, by which not only is the best possible effect secured from the paper print, so that it may be regarded as almost equal to a transparency on glass, but also affords a means of utilising the glass of old or spoilt negatives. Such glass plates, after being thoroughly cleaned, are cut to size, and the prints, after being trimmed accurately as regards size and distance of centres and transposed as usual, are mounted in optical contact in the same way as opalines. Like these the picture is then seen through the glass side, and the effect is excellent and much to be preferred to those mounted on card mounts in the usual way. A good finish can be obtained by backing these with black glazed paper, which, if preferred, can be neatly folded over on to the glass side to form a mask. Suitable black paper may be difficult to purchase in the ordinary way, but can readily be had from a friendly draper, as it is used in packing certain articles of haberdashery.

Collodion Dry Plates for Lantern Work.—In my last note on this subject I left off with the completed plates, and have now to deal with their exposure and development. These plates are more especially adapted for contact printing, but are also quite available for copying in the camera, though on account of their slowness and the translucent character of the emulsion it is advisable to back them when used in the latter way. In contact with a negative of average density, if warm tones be desired, the most suitable illuminant for the exposure is magnesium ribbon, an average exposure being ½ in. of this burnt at a distance of 2 ft. from the printing frame. It is noticeable with plates of this class that finer tones are obtained by shorter exposures to a brilliant light, than by longer exposures to a weaker light, hence when used for reductions in the camera by daylight better tones will be obtained in spring and summer than in winter, unless sunlight is available. For the manipulation of the plates before and after exposure plenty of yellow light is admissible, and it is as well to caution intending beginners that the collodion film is very tender and will not bear nearly so much rough handling as that of gelatin. After exposure the plate should be placed for a few minutes in a dish of plain water, then developed with a solution made as follows:—

No. 1.	Pyrogallol	96 grains.
	Methylated alcohol	1 ounce.
No. 2.	Carbonate of ammonia (clear crystals)	96 grains.
	Bromide of ammonium	24 grains.
	Sulphite of sodium	60 grains.
	Distilled water ...to	6 ounces.

For normal developer add from 10 to 15 minims of No. 1 to 2 drachms of No. 2.

Two drachms of developer are sufficient for each plate of lantern size, the collodion being much less repellent of aqueous solutions than gelatin, and the image quickly appears and gathers in strength, the translucency of the film enabling density to be judged with ease. After washing off the developer with a gentle stream of water, the plate is fixed in a solution of commercial cyanide of potassium of a strength of 20 grains to the ounce. In this it should not be allowed to remain longer than necessary to dissolve out the unaltered silver salt; then after a final wash for a few minutes in several changes of water, it may be dried by heat and varnished, preferably with a solution of amber in chloroform. As I mentioned before, the great advantages of this process are the facility with which the plate can be intensified or reduced locally or wholly, and its elasticity in enabling one to obtain good slides from indifferent negatives, but these operations will form the subject of a future note.

Collodion Emulsion Lantern Plates.—During the ripening of the emulsion prepared as described on page 635, the glass plates may be made ready for coating. If carefully used the quantity of emulsion will be found sufficient to coat about one gross of plates of lantern size—viz., 3¼ inches square. The glass sold for cover glasses of lantern slides is the best and most convenient to use, but those economically inclined may prefer to employ spoilt negatives, which can be cleaned and cut to size. Very great care must be exercised in the cleaning of the glass; my own plan is to wash first with Brooke's soap, and polish dry with a clean cloth, then clean the side to be coated with tripoli and methylated spirit, finally polishing with a piece of washleather, kept specially for the purpose. As each plate is finished it is placed in a grooved box, the cleaned faces all one way. In order to prevent any subsequent slipping of the film it is necessary, before proceeding with the coating, to apply a dilute solution of indiarubber in benzole to the edges of each plate to a depth of about one-eighth of an inch. The indiarubber solution supplied for mounting prints, diluted with two parts of benzole, is very convenient for this. Some workers, I believe, prefer to employ a substratum of albumen over the whole plate. In my experience this is no more effective, and on account of the great attraction of wet albumen for every available particle of dust, it should not be used unless the plates can be dried in an absolutely dust-proof chamber.

Coating the Plates.—We now come to the coating of the plates with the sensitive emulsion, which we will assume now to have had time to ripen sufficiently. The whole of the operations can be conducted in plenty of yellow light. The necessary appliances are few and simple, as follows:—A large flat dish of distilled water, another flat dish containing stale beer, in which one grain of pyrogallol has been dissolved in each ounce, a large fish kettle or flat tray of boiling water kept hot over a gas-stove or spirit lamp, and covered with a sheet of zinc, on which is laid a double thickness of clean blotting paper, and a second clean and dry bottle, rinsed out with pure alcohol, into which to pour the surplus emulsion from off each plate as it is coated. The emulsion should have a final thorough shaking about half an hour before it is required for coating, and then be strained carefully through a plug of absorbent cotton, through which a little pure alcohol should first be passed to remove any adherent particles, and all is now ready to proceed with the operation. The method of pouring the collodion emulsion over the plate is very simple and easily acquired. Having arranged all the plates conveniently at hand in the grooved light-tight boxes, take each plate in succession, and holding it in a horizontal position by the left-hand near corner, between the thumb and forefinger of the left hand, take the emulsion bottle in the right hand and pour a pool of emulsion upon the plate, sufficient to cover about one-fourth of its surface, then incline the plate quickly and gently, so that the emulsion shall flow from corner to corner, finishing with the near right hand one; then pour off the surplus into the second bottle, gradually bringing the plate to a vertical position, and gently rocking it to avoid streaks or crape marks. After the emulsion has set, which will be in a few seconds, each plate should be placed in the dish of distilled water, the object of which is to dissolve out the soluble bye-products of nitrate and chloride of cadmium, then finally in the beer and pyro solution, or organifier, as it is called, which by adding organic matter fills up the pores of the film left by the elimination of the soluble salts, thus strengthening it. The organifier also has a distinct influence upon the density and tone of the finished transparency; other substances may be used, such as tea, coffee, gum, etc., in fact, there is here open a little field of research into the effects of different organic substances when applied in this way. The coated plate should be allowed to remain for about five minutes in each bath, then without washing be placed in a rack to drain, until surface dry, *i.e.*, until no more moisture remains than is contained in the film itself, then finally dried by heat on the zinc plate over a water bath. As they become thoroughly dry the plates should be stored away in light-tight grooved boxes until required for use. Although this operation takes so many words to describe, the whole matter is very simple in practice, and a gross of lantern plates may with very little practice be coated and made ready for use in a single evening. The exposure and after manipulation of these plates will form the subject of a future note.

COMMERCIAL INTELLIGENCE.*

The Demand for Quinine during 1900, Dr. Frederick Rose, His Majesty's Consul at Stuttgart, reports, was very irregular, being very brisk during some months and very weak during others, and it does not appear that the wars in China and Africa have exerted any perceptible influence upon the course of the trade in quinine. Prices during the last few years, he states, have risen steadily, following the prices of quinine bark; thus, in January, 1900, the kilo (2 1/5lbs.) stood at 46s., rose in August to 54s., and sank in December to 42s.

The Demand for Nitro-Phenols, Dr. Rose states, has latterly decreased, as they have been replaced for certain purposes by other products. The import of carbolic acid still continues to be sent almost exclusively from the United Kingdom.

The Dissolution of the "Salicylic Acid Trust" towards the end of 1900 resulted in a general fall of chemical products prepared from salicylic acid. The export of these chemicals to the United States, France, and Austria, Dr. Rose states, has been rendered almost impossible by the high duties which prevail in those countries; consequently, the chemical manufacturers are said to desire the enactment of trade treaties based upon the principle of free importation of raw materials and a reciprocal treatment with other countries for duties on chemicals.

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* From Consular Reports and other official sources.

THE STRUGGLE BETWEEN NATURAL AND SYNTHETIC INDIGO still continues, and, Dr. Rose remarks, it would seem that, owing to the favourable harvest of 1900, the prospects of natural indigo have improved for the moment. The retail indigo trade, he states, is at present extremely hampered in its movements owing to the uncertainty regarding the real cost of the manufacture of artificial indigo and the manifold patents for its production. Dr. Rose finds it difficult to obtain absolutely reliable statistics regarding the consumption of indigo in Germany, and the amount exported as the difference between artificial and natural indigo is not always given. There can scarcely be any doubt, Dr. Rose thinks, that the existence of natural indigo has become precarious, and will most probably remain so; on the other hand, he has reason to believe that, provided the prices remain moderate, it is probable that the natural product may still be used in Germany for several purposes in preference to artificial indigo.

THE TOTAL EXPORTS OF OPIUM from the Vilayet of Kossovo (Turkey) during 1900 is estimated at 80 tons, valued at £105,000, while the quantity of opium seeds exported is said to have been 2,700 tons, of the value of £30,000. Those totals were an increase on the preceding year, the increase being chiefly a result of the excellence of the opium crop and the high prices—due to competition between the United Kingdom and the United States—which it fetched. The total value of the opium exported exceeded the previous year's total by over £80,000, the excess being due partly to the addition of the Kinprulu district to the Vilayet of Kossovo, and partly also to the ever-increasing cultivation of the poppy in preference to the less remunerative corn. The collecting of the opium in 1900 is said to have been attended with magnificent weather, and in quantity and quality the crop left little to be desired. The eighty tons stated as the yield, Vice-Consul Shipley thinks, is probably an under estimate.

THE TOTAL VALUE OF CHEMICALS, dye stuffs, and tanning substances imported into the United Kingdom during the month of November, last year, amounted to £423,356, an increase of £22,999 on the imports for the same month in 1900, when the total value was £400,357. For the eleven months ending November 30, 1901, the import value shows an increase of £510,970, the figures for those months being £5,661,307 against £5,150,337 in 1900. Articles covered by the term, "chemicals, dye stuffs, and tanning substances," include bleaching materials, calcium carbide, sodium compounds, borax, brimstone, saltpetre, bark for tanning, Cutch and Gambier, alizarine, aniline, and other coal tar dyes, indigo, valonia, and other unenumerated articles. The value of "unenumerated drugs" imported during the month of November during the last three years was £114,960, £99,634, and £122,595, respectively, while for the eleven months ending November 30 the total value was £988,889 in 1899, and £1,108,250 and £1,029,044 in 1900 and 1901 respectively.

THE TOTAL EXPORT VALUE OF CHEMICALS, and chemical and medicinal preparations forwarded from the United Kingdom to other countries during the month of November increased by £67,220 on the export value for the same month in 1900, the figures being £774,299 last November, and £707,079 in November, 1900. For the eleven months ending November 30, however, there was a decrease in the export value of £273,282, the total figures being £8,550,085 in 1900, and £8,276,803 this year. The term, "chemicals and chemical and medicinal preparations," covers alkali, bleaching materials, copper sulphate, artificial manures, medicines comprising drugs and medicinal preparations, and sodium compounds.

PHARMACEUTICAL SOCIETY.

EXAMINATIONS IN EDINBURGH.

Government Visitor's Report for 1901.

Report on the Examinations of the Pharmaceutical Society of Great Britain, held in Edinburgh during the year 1901.

19, Sandyford Place, Glasgow,
December 20, 1901.

To the Lords of the Council.

My Lords,—I have the honour to report that examinations were held in Edinburgh during the months of January, April, July, and October, 1901, by the Board of Examiners of the Pharmaceutical Society of Great Britain. I was present on fourteen occasions, and beg to submit the results of both the Major and Minor Examinations:—

MAJOR EXAMINATION.

	Number.	Percentage.
Candidates examined	8	—
Candidates who pass d	4	50
Candidates who failed	4	50
REJECTED CANDIDATES.		
Obtained marks in each subject but failed in the aggregate	4	50

Remarks.—Eight candidates presented themselves for this "Honours" examination, and it is pleasing to note that a higher percentage passed than at any time during the past five years. The standard of work was also very much better, as none of the candidates completely failed in any of the subjects; their want of success being due to failure in obtaining the full aggregate of marks required for a pass. This should be an encouragement for these rejected candidates to again present themselves for examination at an early date.

MINOR EXAMINATION.	Number.	Percentage.
Candidates examined	415	—
Candidates who passed	184	44·3
Candidates who failed	231	55·6
REJECTED CANDIDATES.		
(A) Candidates who failed in practical work on the first day, and were not admitted to oral examination	127	30·6
Failed in practical chemistry	21	5·0
,, practical pharmacy	35	8·4
,, both above	71	17·1
(B) Candidates who passed in practical work but failed in the oral examination	104	25·0
Failed in botany	8	—
,, oral chemistry and physics	33	—
,, materia medica	9	—
,, prescriptions	4	—
,, oral pharmacy	19	—
Obtained marks in each subject but failed in the aggregate	52	12·5

The practice of stopping a candidate whenever he fails in any part of the oral examination makes it impossible to give a percentage of the rejections in each subject.

Remarks:—I have previously been able to report a gradual though slow increase in the percentage of passes, with the exception of last year, when there was a slight falling off. This improvement has been even more marked than the figures apparently show, as the standard of work over the whole range of examination subjects has been better, due no doubt to more thorough training. This year the percentage of passes has suddenly risen to 44·3 per cent., or nearly 9 per cent. over those of last year, and the candidates have done even better than these figures seem to indicate, as the number who obtained marks in each subject, but only failed in the aggregate, represents nearly 41 per cent. of the total failures.

The practical work was much better done than usual, 69 per cent. being successful, as against 62 per cent. last year.

In the oral part of the examination the greatest improvement is seen in botany. I have previously had to report on the large number of failures in this subject, but students are evidently giving it more attention, as they are now much better prepared than in former years.

Chemistry, however, still remains the subject which presents the greatest difficulty to the student, yet it is one the importance of which cannot be exaggerated, as it plays such an important rôle in pharmacy.

There is such a decided improvement this year that we may well look for the cause. It is so coincident with the increased examination fee, that it is probably due to the influence of this preventing students presenting themselves before the Examiners, until they consider they are sufficiently prepared. It was evident that formerly a certain proportion of candidates appeared on the off-chance of passing, or to see what like the examination was.

I am strongly of opinion that were a compulsory curriculum instituted, there would be a still more marked improvement, as it would thus compel the student to undergo a thorough systematic education in recognised schools of pharmacy, and would prevent that waste of energy by which students, during a three or six months' "cram," commit to memory a number of facts which they do not understand, and quickly forget.

I am able to express entire satisfaction with the manner in which the Examiners performed their duties.

I have the honour to be,
My Lords,
Your obedient Servant,
(Signed) G. BALFOUR MARSHALL,
Visitor.

Major Examination Questions (London).

Saturday, December 28, and Monday, December 30, 1901.

CHEMISTRY.

Time allowed, Three Hours.

[Six questions only are to be attempted; and of these, at least two must be taken from Part II.]

PART I.

1. Describe exactly how you would carry out experiments to demonstrate the law of combination in multiple proportions.

2. Give an account of nitrogen trioxide and nitrous acid. Give an example of the oxidising and of the reducing property of nitrous acid.

3. How would you prepare a specimen of pure amorphous carbon? Describe how from it a crystalline variety of carbon may be obtained. What gases are produced when steam is passed over heated carbon ?

4. Describe the analytical method for separating aluminium, chromium and iron, and explain the chemistry of the operations by means of equations.

5. What is the chief ore of tin and how is the metal extracted from it in a pure condition ? What is the action of nitric acid upon tin ? How would you prepare the two chlorides of tin ?

PART II.

6. Name five of the chief compounds contained in coal tar, and describe how to prepare a derivative of each of them.

7. How is glycerol obtained ? Describe the action upon it of hydriodic acid, hydrochloric acid, oxalic acid, and nitric acid.

8. How many tartaric acids are known, and how are they prepared ? How are their distinctive properties accounted for ?

9. Describe a good working method for preparing any three of the following:—(*a*) acetone, (*b*) ethyl benzoate, (*c*) quinine, (*d*) urea, (*e*) oxalic acid.

PHYSICS.

Time allowed, Three hours.

1. Describe fully the phenomena accompanying gaseous diffusion, and explain the statement that "the velocities of the molecules of gases vary inversely as the square roots of their specific gravities."

2. A piece of lead weighing 2 lbs. and at a temperature of 100° C. is dropped into a cavity in a block of ice. How much ice will be melted ? (Specific heat of lead = 0·032.)

3. Describe the arrangement of a "Bunsen photometer." In determining the illuminating power of a gas flame with this photometer the distance from the flame to the grease spot was 84 c.m., and from this to the standard candle 40 c.m.; what was the candle power of the gas flame ?

4. It is said that the vapour of any liquid exerts a definite pressure which depends upon (1) the nature of the liquid and (2) the temperature. How would you show that this is the case ?

5. Describe a simple form of polarimeter, and explain how it may be used to determine the specific rotation of any optically active substance.

6. Describe the construction (*a*) of a Volta's pile, (*b*) of a Daniel's cell, and explain the action which takes place in the last-named cell.

BOTANY.

Time allowed, Two Hours.

[Not more than Three questions are to be attempted.]

1. Describe fully the structure of the phloem of a dicotyledon, and state the principal functions of the different parts.

2. Describe the structure of a green leaf, and explain how the structure is related to the functions discharged by leaves.

3. Enumerate the various reserve materials found in seeds, and state by what tests they can be recognised; explain briefly the process by which they are rendered available for the nutrition of the embryo.

4. What do you understand by the term "growth"? Draw a diagram of a seedling, showing the regions in which you would expect growth to take place.

PRACTICAL BOTANY.

Time allowed, One and a Half Hours.

1. Refer the specimens A and B to their respective natural orders, giving your reasons. Draw their floral diagrams.

2. Make two preparations to illustrate the structure of C, and indicate on a sketch the various structures seen.

3. In the specimens D and E dissect out and make a diagram of all the parts you can observe with the naked eye, and give a short account of their morphology.

MATERIA MEDICA.

Time allowed, One Hour.

1. Give as many instances as you can of the presence of enzymes in official drugs, and state what decomposition each brings about. What conditions are most favourable for their operation ? Tabulate your answer ?

2. Give a list of the reagents commonly employed in the histological examination of drugs. State *exactly* how they are used and what inferences may be drawn from their behaviour. Tabulate your answer.

PRACTICAL MATERIA MEDICA.

Time allowed, One and a Half Hours.

1. Make preparations illustrating the structure of the leaves provided. Sketch only such parts as you consider to be of diagnostic value. Label your preparations and leave them for inspection.

2. Report on the purity of the sample of powdered leaves. Illustrate your remarks with diagrammatic sketches.

LETTERS TO THE EDITOR.

Preservation of Laboratory Solutions.

I shall do my friend Cripps an injustice if I do not correct the error in my note, published in the *P.J.* of last week, page 717. The acetic acid applies to the solution of albumin, which is sixth, not fifth. The error is mine, I fear, because I subsequently add sodium thiosulphate.

Birmingham, December 30, 1901. F. H. ALCOCK.

Pharmaceutical Organisation in London.

The subject of organisation in London has recently come to the front. The remedy proposed is a Metropolitan Association intended to represent the views of the great—hitherto unvoiced—mass of London chemists. But it is pooh-poohed, ridiculed, and wrapped with irrelevant observations by various scribes and speakers. Evidently some people view with concern and even fear the formation of any effective association. That proves the necessity for the step. To my mind, it is scarcely possible to magnify the importance of the project, and therefore I beg permission to criticise and offer suggestions. Are the means suggested likely to be successful? Will the formation of a huge Metropolitan association produce an organised London? I see few elements of success in it. A few men—whose efforts we must admire, and whose intentions are manifestly honest and praiseworthy—would really form the Association, whilst the bulk of the members would be merely subscribers, expecting some problematical benefit to accrue. Presently the association would die of inanition. There is a more promising method in the formation of local associations. It is feasible and practicable to form such in districts corresponding to the Parliamentary divisions. There is comparatively little trouble, and the expense is trifling in running such associations, whilst the practice of qualified chemists meeting each other periodically is wholly beneficial. Further, the federation of London associations presents no difficulty, because of their proximity. Delegates from all parts could meet quite easily. I venture to say that by such a method Metropolitan opinion would be educated, formed, and expressed. I offer no apology for coming into this discussion, because effective organisation all round is of most urgent importance. Opportunities are upon us—opportunities which, if not taken advantage of, will be gone for ever.

I would like to digress somewhat. This agitation—essentially one for keeping the exercise of the qualification to the individual, and consequently the prevention of unqualified practice—was some years ago characterised as a passing wave, which would die away with the season. But the movement has spread, until now the London rank and file are seeing the necessity and the utility of helping themselves. Instead of the agitation being dead, I am on the Council, a direct representative with an unmistakable mandate; fifth on the poll, and nearly twice the voting strength of any unofficial candidate. Well, apropos of all this, I am charged with the betrayal of the trust so distinctly placed with me, on the assumption, I suppose, that voice must accompany work. But what are the facts? I have protested several times, publicly, that members of the Society are in absolute ignorance of the Council's work, and that they ought, at least, to have sufficient information to enable them to form an intelligent opinion. I certainly will not rest until this end is attained. The Pharmaceutical Society should be abreast of the times. Again, I have asked more than once, Are chemists satisfied that a qualified person shall suppress name and individuality, by using a fictitious and unmeaning (as far as the Act is concerned) style and title? In other words, shall a personally acquired qualification be associated with the title as enacted by Section 17 of the Pharmacy Act? Is it supposed that I am not serious when I ask members to emphasise the mandate so unmistakably given in May? Are we always to be the shuttlecocks of pharmaceutical journalism?

Blackburn, December 31, 1901. R. LORD GIFFORD.

The Amylolytic Value of Diastase in Gastric Digestion.

In his excellent paper on "The B.P.C. Formulary" (*vide* p. 735), Mr. D. B. Dott remarks with reference to "Extractum Malti": "But too much importance is attached to diastase in malt extract? If the acids of the stomach are sufficient to destroy the diastasic action the undoubted value of malt extract can hardly depend mainly on its diastase, though an extract fairly rich in diastase has its own value as an aid to the digestion of starchy foods when mixed with the latter before entering the stomach." Permit me to point out that this statement is not in accordance with the results of recent research in the physiology of gastric digestion. The writers of the article "Digestion" in the authoritative 'Encyclopædia Medica,' now in course of publication, say, "In the earlier stages of digestion the acid of the gastric juice is neutralised by the alkali of the food and of the saliva. For a variable period (three-quarters of an hour, according to Van d. Velden) free hydrochloric acid cannot be detected, the hydrochloric acid entering into loose combination with the albumoses, peptones, and albumins (to form acid albumin in the latter case) as quickly as it is secreted. During this period—the amylolytic stage of gastric digestion—the ptyalin of the saliva continues to exert its action upon the carbohydrate material of the food." . . . "The ptyalin of the saliva converts the starch into dextrins and maltose. This action continues as long as there is no free acid present in the stomach." (Vol. II., pp. 541-2-3.) In view of these facts it is obvious that it is of the highest importance that any extract of malt used as an aid to digestion—*e.g.*, in cases of amylolytic dyspepsia, should be of full diastasic strength.

Glasgow, December 30, 1901. J. P. GILMOUR.

The Study of Physics.

Mr. Upsher Smith's treatment of the study of physics for our examinations is very commendable, and should prove helpful, especially to candidates whose aim in their scientific and general studies is just to get the fringe of knowledge necessary to slip through the examiner's hands. It is lamentable to see men little anxious to gain proficiency in what really pertains to their business. I contend that it is necessary to have a good grasp of the subjects for pharmaceutical examinations, even from a business point of view. Knowledge is power, and surely one wants a good equipment to ensure success in these days. There is a genuine outcry about the scarcity of apprentices. The future of our business will be maintained, and the confidence of the public merited, by the future men being of better general education. We cannot expect to lag behind and hold a position of credit. There should really be very little difficulty to industrious youths in securing a good all-round scientific and practical education at a very little cost, except of patient hard work. Pupils in pharmacy, before leaving school, should have secured a thorough good all-round education. The tough part should not be left to be overcome during the years of apprenticeship; masters must advise future pupils more wisely, and also look to the calibre of those who desire to adopt pharmacy as their work. There is a great responsibility upon chemists in the matter of taking persons into the business without advising them of the real work that lies before them, and also in selecting apprentices for their fitness in pharmacy.

January 1, 1902. "R. E. W." (113/35).

REPLIES TO CORRESPONDENTS.

AMERICAN REMEDIES (C. C.—69/2).—Advise your friend to have nothing to do with the concern. See note on the subject at page 13.

PRO-VAC (J. A.—68/31).—The antiseptic dressing you mention is prepared by Mr. John Hick, 2, Queen's Terrace, St. John's Wood, London, N.W.

WRITING ON CERTIFICATE (W. M. B.—113/23).—Your letter has been handed to the Secretary of the Pharmaceutical Society, who informs us that Stephen's blue-black ink is used, and that is usually regarded as permanent. Perhaps you have unduly exposed the certificate to sunlight or noxious vapours.

BOTANY (E. J. B.—68/32).—Whenever you want advice about books for students, please take the trouble, in the first instance, to consult the article on "The Students' Library," which appeared in the Educational Supplement published with the *P.J.* of September 14 last. The best text-book for your purpose is Lowson's 'Text-Book of Botany' (Clive, London 6s. 6d.). Do not omit to read the article referred to.

GLYCO-THYMELINE (P. H. M.—69/1).—We have no information regarding the preparation, but it is probably a solution of thymol, such as is known in America as glycerol (or glycerite) thymol. You can make such a preparation by dissolving thymol, 1 part, in 90 p.c. alcohol, 25 parts, then adding glycerin, 25 parts, and water, *q.s.* to make 500 parts by weight. The solution can be coloured with tincture of cochineal.

STICKY GUM FOR SILK (M. M.—68/6).—Your query is not sufficiently definite to allow us to give you a satisfactory answer. If you want a substance like court plaster you cannot do better than use the formula for Emplastrum Ichthyocollæ U.S.P., which you will find at p. 114 of Braithwaite's 'Pharmaceutical Formulary.' If too dry for your purpose increase the amount of glycerin. If, however, you want a resinous, permanently sticky surface, you might try a mixture of birdlime, 10; castor oil, 10; yellow resin, 18; melt together.

PREPARING ANIMAL SKELETONS (E. O. J.—67/27).—One of the best ways, but which is only practicable in the summer, is to place the body of the animal or bird in an ants' nest. If this be done in the nest of the large wood ant, common in pine woods, an excellent skeleton will be obtained in a few weeks, and in a somewhat longer time in the nests of any of the common garden ants. To prepare the skeleton by chemical means, the flesh should first be cut off as far as possible, the bones then heated at a temperature not exceeding 120° F., with 5 per cent. soda solution, until all the adhering flesh drops off. The skeleton should then be thoroughly washed and immersed in oil of turpentine for several weeks, the turpentine being frequently changed. After this treatment it should be taken out, well drained, and exposed to the sun and air, when it will gradually bleach. If not sufficiently white the bleaching may be hastened by maceration in dilute solution of chlorinated soda. The great point, however, is to remove the fat thoroughly by means of the turpentine. Probably a bath of acetone following turpentine would be advantageous.

Pharmaceutical Journal

SATURDAY, JANUARY 4, 1902.

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Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words or less, 6d.; two initials or two figures counting as one word.

AN ASSISTANT or IMPROVER wanted.—State full particulars and enclose photo to G. CRAWSHAW, Hyde Park, Leeds.

A GOOD JUNIOR for light retail and Dispensing; good class.—Full particulars to W. F. COX, 116, Craven Park Rd., Harlesden, N.W.

WANTED, a Junior ASSISTANT, about 22 years old.—Apply, with full particulars, to GLAISYER & KEMP, 11 & 12, North St., Brighton.

JUNIOR.—HUNT & CO., Chemists, Winchester, have a vacancy for a Junior ASSISTANT or IMPROVER, in light retail and dispensing business.—Please apply, stating salary required, with references, &c.

NEATH.—JUNIOR wanted (outdoors), for light retail and Dispensing business; no Sunday duty; good salary paid to an efficient man.—Apply, giving usual particulars, to W. HIBBERT & SON, Neath, Glamorganshire.

WANTED, qualified LADY CHEMIST to supervise the putting up of high-class pharmaceutical preparations.—In applying, full particulars of experience, age, and salary required, must be given to L. C., Pharm. Journal Office, 8, Serle St., W.C.

MANAGER Wanted; about 25; Minor qualification absolutely necessary; must be quick and active, and well up to the business; salary to commence £80 a year; indoors.—Apply, with full particulars, to CHEMIST, 105/7, Talbot Rd., Bayswater.

COLCHESTER.—ASSISTANT wanted, for light retail and Dispensing; hours of business 8 to 8, Saturdays 10 p.m., Thursdays 2 p.m.; indoors preferred.—Applicants should give all usual particulars, and salary required, WEDDELL, 105, High St., Colchester.

Assistants Wanted—Continued

BEAULIEU-SUR-MER, FRANCE.—Wanted, early in January, qualified English ASSISTANT, knowledge of French unnecessary; outdoor.—Send references, age, height, and salary required, to GROSGURIN, Pharmacie Anglo-Française, Beaulieu-sur-Mer.

CAPE COLONY.—A qualified ASSISTANT wanted for a good-class business. Salary (outdoors), £180 1st year; £192 2nd year; £204 3rd year; passage paid out; 3 years' agreement.—Apply, giving full particulars to CAPE, 20, Bousfield Rd., St. Catherine's Park, London, S.E.

TRURO.—Wanted ASSISTANT; outdoors; one accustomed to good-class Retail and Dispensing business; good appearance and address; age about 25; easy hours, no Sunday duty.—Enclose photo (to be returned), and all usual particulars (height, &c.), W. H. BUCHER, Pharmaceutical Chemist, Truro.

REGENT'S PARK.—Wanted, Junior ASSISTANT of good address; indoors; state age, height, previous experiences, references, and salary required.—Apply, personally or by letter, enclosing photo (to be returned), W. H. BELL & CO., Pharmaceutical Chemist, 96, Albany St., Regent's Park, N.W.

PART-TIME ASSISTANT; obliging and competent for stock and Dispensing in Suburban business; three days a week or other time arranged; small salary; indoors; advertiser prefers to hear from one having a good knowledge of Photography for amateurs, and who later wants a good permanent situation indoor or out.—MONTMARTRE, Pharm. Journal Office, 8, Serle St., W.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified ASSISTANT; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to STRAITS SETTLEMENTS, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM Tenens; town or country.—R. H. Smith, M.P.S., Newstead, Harrogate.

LOCUM, M.P.S.; town or country; disengaged.—W. Smith, 12, Westfield Rd., Surbiton.

CHEMIST studying for final medical desires Dispensership.—Rogers, 322, York Rd., N.

LOCUM or Senior; 30; qualified; experienced; disengaged.—Statim, 49, Abbey Rd., N.W.

QUALIFIED Chemist; 28; disengaged till May 1st.—Medicus, 17, Rockmead Rd., N.E.

QUALIFIED; 25; nine years' best class experience.—Clouting, 97, Edridge Rd., Croydon.

QUALIFIED; 26; London preferred; West-end experience.—Statim, 27, Talbot Rd., Bayswater.

QUALIFIED; Senior; outdoors; first-class experience.—Cruickshank, 11, Elm Grove, Southsea.

QUALIFIED; 22; tall; seeks engagement; London preferred.—T. C. Peberdy, The Beeches, Cossington.

ASSISTANT; Dispenser; 29; disengaged; outdoors preferably; references.—Statim, 103, Ripple Rd., Barking.

QUALIFIED; 36; Branch Manager; married; photography.—Optician, 43, Havelock Rd., South Wimbledon.

MANAGER; qualified; 31; Prescriber, Extractor, Photographer; disengaged.—Beta, 27, Walpole Terrace, Brighton.

ASSISTANT; disengaged; outdoors; in or near North London; time for study.—Weston, 54, Hillmarton Rd., Holloway, N.

PART-TIME, to take Evening Classes for Minor, Junior; age 21; tall; 4½ years' experience.—D. Morris, Pentneff, Llanymynech, Oswestry.

QUALIFIED; 25½; good-class Provincial and West-end experience; London preferred.—Rhei, Pharm. Journal Office, 8, Serle St., W.C.

29; 5 ft. 10 in.; Manager or Senior; Major; Photography; Cheltenham and Harrogate experience.—B., 11, Reginald Mount, Leeds.

SMART Commercial (at present foreign agent) desires appointment to represent Wholesale or Manufacturing House.—Statim, Pharm. Journal Office, 8, Serle St., W.C.

LOCUM TENENS; days, weeks; moderate; reliable; engagements booked forward.—T. C. Beach, M.P.S., Windsor Edge, Inchbrook, Stroud, Glos. Telegrams: Beach, Nailsworth.

Engagements Wanted—Continued.

SENIOR; age 26; 10 years' first-class London and Provincial experience in Dispensing and counter; knowledge of Photography.—Brighton, Pharm. Journal Office, 8, Serle St., W.C.

PHARMACEUTICAL Chemist seeks position as representative in the Provinces of good-class house; excellent references and first-class experience.—Beta, 8, Serle St., London, W.C.

ASSISTANT; 29½; 5 ft. 8½ in.; excellent all-round experience; competent and trustworthy; good prescriber and extractor; satisfactory references; outdoors preferred.—Salol, 55, Fore St., Redruth.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

OFFERED.

Medical Directory, 1901, carriage paid. Offers wanted.—Gatward & Wright, Yeovil.

105 Idris A 6 per cent. Preference, price 21/9. 300 A Ordinary, 25/9. Both ex dividend, will divide.—M., 30, Tranquil Vale, Blackheath, S.E.

Perfume Ribbons, quarter inch wide, 36 yards long, post free, 1/6. Blue, Pink, Green, Mauve, Crimson, Salmon (6 rolls, 7/6).—Edward Peck, East Dereham.

What offers for the following:—Two 10-gal. pear-shaped carboys, cut-glass stoppers; 2 round mahogany stands for same; 2 large show jars for window, 24-in. high, inclusive of cover, as May Roberts' fig. 3, page 82; 2 stands for same.—Thompson, 192, Manchester St., Oldham.

Bagatelle Board.—Very handsome best mahogany folding bagatelle board, 8 ft. long, quite new and completely fitted, with 9 real ivory balls, cues, indiarubber cushes, markers, rules, lock and key. Nice size for family use or reading room, etc. Only £3 12s. 6d.; worth £6 6s. Approval before payment.—Mr. P. Ralph, Cambridge House, Lakenheath, Suffolk.

Fish Knives and Forks.—Six pairs very handsome, best silver plated fish knives and forks, with beautiful sterling hall marked silver handles, by Mappin, in elegant case, only £2 2s., worth £4. Also pair of silver plated fish servers to match, only 21s., worth 38s. Both new. Presents. Approval before payment willingly.—Mr. P. Ralph, Cambridge House, Lakenheath, Suffolk.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

WANTED.

Two Cases Fairbank's Tar Soap, 3d.—Goss, 130, Notting Hill Gate, London.

Platinum Utensils and scraps for cash.—P. Rowsell, 9, Derwent Grove, Dulwich.

READING COVERS Cloth, Gilt-lettered Covers, with strings, to hold twenty-six numbers of the "**Pharmaceutical Journal,**" may now be obtained. The charge, including postage, is **2/-** each, and should be remitted to

The PUBLISHERS, 8, SERLE STREET, LINCOLN'S INN, LONDON, W.C.

COVERS FOR BINDING Cloth, Gilt-lettered Covers for binding the half-yearly volumes of the "**Pharmaceutical Journal**" may now be obtained. The charge, including postage, is **1s. 2d.** each, and should be remitted to

The PUBLISHERS, 8, SERLE STREET, LINCOLN'S INN, LONDON, W.C.

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows :—Fifty words, or less, 3s. 6d. ; each additional ten words, or less, 6d. ; two initials or two figures counting as one word.

OLD-ESTABLISHED Business for Disposal, in main street of large town in South of England ; capable of great increase ; owner will sacrifice for £150 cash.—For full particulars apply to Hydrogen, Pharm. Journal Office, 8, Serle St., W.C.

TYNESIDE.—NORTHUMBERLAND.—For Sale, by private contract, the Freehold Premises containing a handsomely fitted-up corner shop and comfortable dwelling-house, with a Drug Store Business attached, also Wines and Spirits. — Apply to H. Havelock, Auctioneer and Valuer, Hexham.

CARDIFF.—As a going concern, situated in the principal thoroughfare, established Retail, Dispensing, Photographic and Prescribing Business ; splendid chance for up-to-date man ; stock and fixtures at a nominal sum ; satisfactory reasons for disposal.—Apply, R. Penrose Kenrick, Trade Valuer, &c., Cardiff.

FOR SALE.—A splendidly-fitted Chemist's Shop, in a busy thoroughfare in Liverpool ; present returns only average £5 a week, but the business has done more than double the amount, and could be made to do so again by an energetic man.—For particulars, apply, R. Sumner & Co., Ltd., Wholesale Druggists, Liverpool.

Under Deed of Assignment.]

BLACKFRIARS ROAD, S.E., within three minutes' walk of Blackfriars Bridge.

MESSRS. CRONK have received instructions from the Trustee under a Deed of Assignment, to Sell by Auction, at the Auction Mart, Tokenhouse Yard, E.C., on Friday, January 24th, 1902, at Two o'clock precisely, the valuable Leasehold Shop and Manufacturing Premises, known as 58, Blackfriars Road, situated in the best part of this important thoroughfare, together with the goodwill of the old-established Business of Messrs. Powell and Barstow, Manufacturers of Surgical and Veterinary Instruments, Elastic Stockings, Speaking and Gas Tubing, Druggist's Sundriesmen, &c., and valuable Fixed Plant, Machinery, Engines, and Trade Fixtures.

It embraces an area on ground floor of about 1,300 superficial feet, and comprises a substantial building of four stories and a basement, with every accommodation for carrying on this profitable trade.

It is held on lease for a term of ninety-nine years, of which about 86½ years are unexpired, at the very low Ground Rent of £25 per annum.

The above will be sold as a going concern, and possession given on completion of the purchase.

Particulars and conditions of sale may be obtained at the Auction Mart, E.C. ; of S. Cronk, Esq., Trustee, Chartered Accountant, 43 and 44, Lombard Street, E.C. ; of Messrs. May, Sykes & Co., Solicitors, Suffolk House, Laurence Pountney Hill, Cannon Street, E.C. ; and of Messrs. Cronk, Land Agents and Surveyors, 12, Pall Mall, S.W., and Sevenoaks, Kent.

Business Wanted

ADVERTISER is open to Buy a small good-class Business or Partnership with early succession. — R. Belben, 13, Shirley Park Rd., Shirley, Southampton.

CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., Chemists' Transfer Agents, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

The Business conducted by Messrs. Orridge & Co. has been known as a Transfer Agency in the advertising columns of the Pharmaceutical Journal since the year 1846, and is well known to all the leading firms in the Trade.

VENDORS have the advantage of Messrs. O. & Co.'s direct attention and advice as to value without any additional fees.

PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

Terms for Valuation on application.

THOMAS TOMLINSON & SON

Chemists' Transfer Agents and Valuers,

9, NEW CANNON STREET, MANCHESTER.

VENDORS saved time and trouble by consulting before offering for sale. PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address*, "Tomtom."

Address Wanted

MR. POEL or POWEL, late Manager at Mr. Whitelock's, Chadwell Heath, Essex, or anyone acquainted with his present address, would greatly oblige by sending the same to Omega, Pharm. Journal Office, 8, Serle St., W.C.

Shop Fittings for Sale

PLATE-GLASS Shelves, polished edges, 3 ft. long by 20 in., 16 in. and 12 in. standard bars and brackets, complete £3 10s. Chemist's Side Fittings, from £1 foot run. Counters from 7s. 6d. foot run. Counter Cases from 7s. foot run. Dispensing Screen, 6 ft. long, £6 10s. Cheapest house for blinds, mirrors, shelves, lamps, and window fittings.—**TREBLE & Co.**, Complete Shop Fitters, **RECTORY WORKS, RENDLESHAM ROAD, CLAPTON, LONDON, N.E.**

SPECIAL OFFER. Don't miss it.

HEDAKENE LIMITED. The Proprietors of Rayner's "Hedakene," the latest discovery for Headache and Neuralgia, are willing (in order to prove its sterling merit) to supply free of cost (for sale) one gross of "Rayner's "Hedakene" (single powders), together with 1000 8oz. Counter Wrappers and Counter Bills, in return for exhibiting neat Show Card, 14 × 8, and small dummy display. They will also advertise in your Price List or Almanack, distribute hand-bills and sample powders and assist in every way with the sale. Correspondence invited. HEDAKENE LIMITED, Station St., Birmingham.

REGISTRATION OF TRADE MARKS.

Instruction for Registration.

Application for the registration of a trade mark must be made on Application Form F, which costs five shillings, and can be obtained through any money-order office. The form contains general instructions for making the application, and, after being filled up, must be posted to the Comptroller, the Patent Office (Trade Marks Branch), 25, Southampton Buildings, London, W.C. If the mark applied for is one which can be accepted for registration, the applicant must next fill up the Registration Form I, which costs one pound, and can also be obtained through any money-order office. That form must also be sent to the Comptroller, when the mark will be advertised in the *Trade Marks Journal*, after which it will be duly registered if not opposed. A renewal fee of one pound must be paid by the proprietor of a trade mark every fourteen years.

Recent Application for Trade Marks.

*From the Trade Marks Journal, January 1, 1902.**

Mesotan.—242,570. A Chemical Preparation for Photographic Purposes. Farbenfabriken vormals Friedrich Bayer and Company, Koenigstrasse 27, Elberfeld, Germany; Manufacturers.—December 9, 1901. Address for Service in the United Kingdom, care of Newton and Son, 6, Breams Buildings, Chancery Lane, London, E.C.

Edinol.—242,464. A Chemical Preparation for Photographic Purposes. Farbenfabriken vormals Friedrich Bayer and Company, Koenigstrasse 27, Elberfeld, Germany; Manufacturers.—December 4, 1901. Address for Service in the United Kingdom, care of Newton and Son, 6, Breams Buildings, Chancery Lane, London, E.C.

Torpedo.—241,661. Chemical Substances used for Agricultural, Horticultural, Veterinary, and Sanitary Purposes, but not including Fly Paper and not including any Goods of a like kind to these excluded Goods. Heinrich Mack, Kohlgasse 31, Ulm-on-Danube, Germany; Manufacturer.—October 30, 1901. Address for Service in the United Kingdom, care of C. A. G. Browne, 53 and 54, Wych Street, Strand, London W.C.

Capilets.—237,109. Medicated Tablets and Medicated Pills for Human Use. Jeancard, Gazan and Doumin, 13, St. Mary Axe, London, E.C.; Distillers of Essential Oils.—March 28, 1901.

Cullingford's Quicksine.—240,839. A Medicine for Human Use. Edwin Cullingford, 19, Coventry Road, Hay Mill, Birmingham; Chemist.—September 24, 1901. No claim is made to the exclusive use of the work "Quick."

Marach.—241,543. A Medicine for Human Use. The Columbia Chemical Company, 1,729, Curtis Street, Denver, Colorado, United States of America; Manufacturers.—October 25, 1901. Address for Service in the United Kingdom, care of Hunter and Haynes, 9, New Square, Lincoln's Inn, London, W.C. "The essential particular of the Trade Mark is the word 'Marach,' and the applicants disclaim any right to the exclusive use of the added matter, except in so far as it consists of their own name."

Torpedo.—241,662. Chemical Substances Prepared for Use in Medicine and Pharmacy, but not including Medicated Suppositories or Pessaries, nor Effervescing Aperient Medicines for Human use and not including any Goods of a like kind to any of these excluded Goods. Heinrich Mack, Kohlgasse 31, Ulm-on-Danube, Germany; Manufacturer.—October 30, 1901. Address for Service in the United Kingdom, care of C. A. G. Browne, 53 and 54, Wych Street, Strand, London, W.C.

Texlo.—242,381. A Salve for Human Use. Alfred James Barnes, 1, Charlemont Street (corner of Harcourt Road), Dublin; Dispensing Apothecary.—November 30, 1901.

Sitogen.—240,711. A Vegetable Food Extract. Adolf Richard Schmidt, Bahnhofstrasse No. 1, Reichenberg, Bohemia, Austria; Apothecary.—September 17, 1901. Address for Service in the United Kingdom, care of Boult, Wade, and Kilburn, 111, Hatton Garden, London, E.C. "The essential particular of the Trade Mark is the word 'Sitogen,' and the applicant disclaims any right to the exclusive use of the added matter." No claim is made to the exclusive use of the word "Sito."

Lemona.—237,726. A preparation made from Lemons and containing an equal amount of Proof Spirit and Vegetable Acid (Citric), *i.e.*, the Essence of the Peel and Concentrated Juice of the Lemon Fruit. John Macarthur, Jun., 100, Wellington Street, Glasgow; Aërated Water Manufacturer.—April 26, 1901. No claim is made to the exclusive use of the word "Lemon."

Strahlen.—242,116. Aërated Waters, Aërated Beverages included in Class 44. Geo. B. Westmacott and Son, 17, Market Street, Manchester; Chemists and Mineral Water Manufacturers.—November 20, 1901.

COMPANY INTELLIGENCE.

Fuller and Co., Limited.—This company has been registered in London with a capital of £2,000, in £1 shares, to acquire the business carried on at 18, Rampant Horse Street, Norwich, as Fuller and Co., and to carry on the business of druggists, chemists, drysalters, oil and colour men, makers of photographic and scientific apparatus and materials, etc. No initial public issue. T. B. Fuller and A. E. King are joint managing directors.

Shirley Brothers, Limited.—This company has been formed to acquire the business carried on under the style of Shirley Brothers at Whitecross Works, 4 and 4a, Rockingham Street, Newington Causeway, S.E., to adopt an agreement with A. W. Shirley and S. S. Shirley, and to carry on the business of chemists, botanic and homœopathic chemists, druggists, drysalters, druggists' sundriesmen, oil and colour men, bottle makers, confectioners, makers of photographic, surgical, and scientific apparatus and materials, mineral water manufacturers, and dealers in grocers' sundries, soups, broths, invalid and other foods, soaps, soap powders, etc. Capital £30,000 in £1 shares (4,500 preference). Minimum cash subscription 4,500 shares. First directors, T. Adams and E. O. French; qualification, 250 shares; remuneration, £50 each per annum. Registered office: Whitecross Works, Rockingham Street, S.E.

Taylor's Drug Company, Limited.—The fourteenth annual general meeting of this company was held at Leeds on December 23, when 25 per cent. of the net profits was placed to the reserve account. A dividend of 10 per cent. per annum, free of income-tax, was declared on the ordinary shares, and £7,688 7s. 4d. carried forward to next year's account.

Parke's Drug Stores, Limited.—The seventh annual general meeting of this company was held on December 30 at Winchester House, E.C., Mr. P. Warnford-Davis (chairman of the company) presiding. The Chairman, in moving the adoption of the report and accounts, said that during the past year the company had opened or acquired four new stores—at Streatham, Muswell Hill, Holland Park, and Fulham. The balance of profit was £4,173, or something short of last year's figure. The company now had twenty-eight businesses, and the goodwill stood at £12,150. As against that, the reserve funds amounted to £7,198. With the accessions they had made to the businesses during the past year, the directors had come to the conclusion that the time was ripe for them to prepare some of their own articles, and he was glad to say that in their managing director they fortunately possessed one who had the manufacturing business at his finger-tips. It was recommended that a final dividend on the ordinary shares for the year ending September of 3 per cent.—making 6 per cent. for the year—be paid. The report was adopted, and a vote of thanks to the chairman and directors closed the proceedings.

G. H. Scott and Co., Limited.—This company was registered on December 23, with a capital of £10,000 in £1 shares. Object: To acquire the business carried on by J. Robinson, G. H. Scott, and F. Robinson as G. H. Scott and Co., and to carry on the business of chemical manufacturers. Registered office: The Hague-bar Works, Hague-bar, New Mills, Derby.

Valita Company, Limited.—This company has been registered, with a capital of £1,000 in £1 shares, to carry on the business of manufacturing perfumers, drysalters, sundriesmen, manufacturers and dealers in novelties for sale by chemists, stationers, drapers, etc. No initial public issue. The first directors are G. B. Small and J. Evans. Registered office: 64, Clarendon Square, London, N.W.

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* Any objection to the registration of an application for the registration of a trade mark must be stated on Trade Mark Form J, obtainable at any money order office, price one shilling. Such objection must be lodged with the Comptroller within a month of the date given above.

PHARMACEUTICAL SOCIETY.

OFFICIAL NOTICES.

ANNUAL SUBSCRIPTIONS.

All annual subscriptions are now due.

Subscription payable by Members	One Guinea
Subscription payable by Student-Associates ..	Half-a-Guinea
Life Subscription (Members)	Ten Guineas

Subscriptions should be remitted by Post-Office Order, Postal Orders, or Cheque, direct to the Secretary, 17, Bloomsbury Square, or may be paid at the Offices in London or in Edinburgh.

Remittances should be crossed London and Westminster Bank, and cheques should be drawn in favour of the "Pharmaceutical Society or Bearer." Post-Office Orders and Postal Orders should be made payable at the Western Central District Post Office.

THE CALENDAR
FOR 1902
OF THE
PHARMACEUTICAL SOCIETY,

Now in the Press, and will be ready next week.

Contains the questions set for the Major Examination and the various Scholarships Examinations; Lists of Members and Student-Associates, Prizemen, Scholars, Local Associations, etc.; the Pharmacy Laws of Great Britain and Ireland; Bye-Laws, Examination Particulars and School Syllabus; References to Decisions in the Superior Courts; information concerning Methylated Spirit, Stamped Medicines, Stills, Merchandise Marks, Trade Marks, Weights and Measures; and other matter of particular interest to Chemists.

Copies may be obtained from the Secretary, 17, Bloomsbury Square, London, W.C., or through any bookseller.

Price 2s., or, by post, 2s. 4d. Subscribers to the Society are not required to pay the cost of postage on copies purchased by them.

THE REGISTER
OF
PHARMACEUTICAL CHEMISTS
AND CHEMISTS AND DRUGGISTS,
FOR 1902,

Will be published in January, price 5s., or, by post, 5s. 4d.

A systematic attempt has been made during the past year to remove fictitious names and addresses, and several thousand corrections have been effected.

Calendar for January, 1902.

Day of		Events of the Month.	Sun	
M	W		Rises	Sets.
1	W	◖ Last Quarter, 4.8 p.m. Chemists' Managers' and Assistants' Society of Great Britain, at 9.30 p.m. Plymouth Chemists' Ball.	8.8	3.59
2	Th	Royal Institution, at 3 p.m.	8.8	4.0
3	F	West Indies discovered 1402.	8.8	4.1
4	S	Royal Institution, at 3 p.m.	8.8	4.2
5	**S**	**Second Sunday after Christmas.**	8.8	4.3
6	M	Society of Chemical Industry, at 8 p.m. School of Pharmacy resumes after the Christmas recess.	8.8	4.4
7	Tu	Pharm. Soc. G. B. Finance and other Committees. Midland Pharmaceutical Association.—Social Evening. Royal Institution, at 3 p.m.	8.7	4.5
8	W	Pharm. Soc. G.B., Council Meeting, at 11 a.m. Chemists' Managers' and Assistants' Society of Great Britain, at 8 p.m. Manchester Pharmaceutical Association. Newcastle-on-Tyne Chemists' Association. Young Chemists' Association.	8.7	4.7
9	Th	● New Moon, 9.15 p.m. Chemists' Assistants' Association.—"Social." Royal Institution, at 3 p.m.	8.6	4.8
10	F	Northampton Chemists' Association.	8.6	4.10
11	S	Schlegl died, 1829.	8.5	4.11
12	**S**	**First Sunday after Epiphany.**	8.5	4.12
13	M	Practical Organic Chemistry commenced in the Royal College of Science, 1872.	8.4	4.13
14	Tu	Pharm. Soc. G. B., Library, etc., Committee Bradford Chemists' Association. Huddersfield Chemists' Association.	8.3	4.15
15	W	Chemical Society, at 5.30 p.m. Chemists' Ball, Whitehall Rooms.	8.2	4.16
16	Th	Chemists' Assistants' Association, at 8.30 p.m. Glasgow Pharmaceutical Assoc.—"Social." Linnean Society of London, at 8 p.m. Midland Pharmaceutical Association.	8.2	4.18
17	F	◗ First Quarter, 6.38 a.m. Royal Institution, at 9 p.m.	8.1	4.20
18	S	Inter-Pharmacy Football League, Muter's College *v.* "Square."	8.0	4.22
19	**S**	**Second Sunday after Epiphany.**	7.59	4.23
20	M	John Ruskin died 1900; born Feb. 8, 1819.	7.58	4.25
21	Tu	Chemists' Managers' and Assistants' Society of Great Britain.	7.57	4.26
22	W	Newcastle-on-Tyne Chemists' Association. Western Chemists' Association, Smoking Concert.	7.56	4.28
23	Th	Chemists' Assistants' Association, at 8.30 p.m. Sheffield Pharmaceutical and Chemical Society, Exhibition.	7.55	4.30
24	F	○ Full Moon, 0.6 a.m. Royal Institution, at 9 p.m.	7.54	4.32
25	S	Football.—Metropolitan College *v.* Flodden.	7.52	4.33
26	**S**	**Septuagesima Sunday.**	7.51	4.35
27	M	Fichte died 1814; born May 19, 1762.	7.50	4.37
28	Tu	Bradford Chemists' Association. Musical Evening.	7.49	4.39
29	W	London College Dinner.	7.47	4.40
30	Th	Chemists' Assistants' Association, at 8.30 p.m.	7.46	4.42
31	F	◖ Last Quarter, 1.9 p.m. Royal Institution, at 9 p.m.	7.44	4.44

MISCELLANEOUS AND LATE NEWS.

Readers are requested to send items of local news of general pharmaceutical interest. When newspapers are sent, the passages of interest should be marked.

THE DRUG STORES OF MESSRS. BOILEAU AND BOYD, Dublin, on the morning of January 1, narrowly escaped destruction by fire, the premises of Messrs. Todd and Burns, Limited, one of the largest drapery firms in Ireland, which immediately flank the drug stores, being completely destroyed, as well as several small shops in the neighbourhood. Fortunately Messrs. Boileau and Boyd's premises escaped untouched.

ALLEGED LONG FIRM FRAUDS.—The three men—Charles Henry Bedding (35), described as a druggist; Christian Rylander Lee (45), dispenser; and James Hodges (50), agent—who have been before the magistrate at Worship Street Police Court on several occasions (see *Inset*, November 23, p. 15*d*) charged with conspiracy to defraud and with obtaining goods from various firms by false representations with intent to defraud, were on Saturday, December 21, committed for trial at the Central Criminal Court, bail in £100 each not being forthcoming.

SALE OF POISONED GRAIN. At Colchester Police Court on Tuesday, December 31, Thomas William Bates, chemist, High Street, Colchester, pleaded guilty to selling to Henry William Hedges, farmer, of Sheepen Farm, Colchester, poisonous grain calculated to destroy life, contrary to the Poisoned Grain Prohibition Act, 1863, Section 2.—Evidence having been given that a number of sparrows had been found dead on Hedges' land and that strychnine in sufficient quantities to kill a sparrow was found in the crop and intestines of each of the sparrows, the Mayor, after consulting with the other magistrates, said the Bench recognised that farmers were placed in great difficulty with regard to sparrows, owing to their natural enemies, such as owls, being shot by gamekeepers. But a breach of the law had occurred, hence Mr. Bates and Mr. Hedges would each be fined 5s. and costs.

SCHOOL AND COLLEGE NEWS.

WESTMINSTER COLLEGE OF CHEMISTRY AND PHARMACY.—On Tuesday, December 24, at the close of the course of lectures, the certificates were distributed to the successful students in the competition which took place on the 10th inst. At the close of the ceremony Mr. Willox, on behalf of the students, presented their principal (Mr. Wills), with a handsome silver cigar case.—Mr. Wills, in replying, wished them all success in the coming examination, and presented each gentleman present with a tin of cigarettes, and the lady pupils (seventeen in number) with a bottle of perfume, much to their surprise and delight.

PERSONALITIES.

HERRN MAX TRÖLICH the past-President of the German Apotheker-Verein, who now holds the position of Pharmaceutical Assessor in the Prussian Ministry of instruction and medical affairs, has received the title of Medicinal Councillor.

MARKET REPORT.

The articles quoted here have often to be sorted in order to suit the requirements of the retail pharmacist, and the quotations given are in all cases the lowest cash prices for bulk quantities. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

LIVERPOOL, WEDNESDAY, JANUARY 1, 1902.

Business at the close of the year has been very slow, partly owing to the interruption of holidays, but principally through the settled quietness observable for the last two or three months. The only consoling feature is that prices have not been interfered with to any great extent.

AMMONIA SALTS.—Carbonate, 3⅞d. per lb. Sal Ammoniac, 37s. to 41s. per cwt. Sulphate, £11 2s. 6d. to £11 5s. per ton.

BEESWAX.—Small sales of Peruvian are reported at £7 5s. per cwt.

BLEACHING POWDER.—35 to 37 per cent., £6 15s. to £7 5s. per ton.

CANARY SEED—Is firm, but there have been no sales of Turkish from which to quote a price.

COPPERAS—Continues steady at the high rate of 42s. 6d. to 45s. per ton.

GUM—Is steady as regards Arabic varieties, and 30 serons of "sorts" made 37s. 6d. per cwt.

LINSEED—Is slow of sale. River Plate is weak and offers at 46s. 6d. per 416 lb. for December-January shipments. North American is not now offered or quoted, though a short time since it was nominally at 52s. per 424 lb. for December shipment.

OILS (FIXED) AND SPIRITS.—Castor Oils are not very busy, and are still at 3¼d. per lb. for second Calcutta spot and January-February shipment, 3d. for first French, 2⅞d. for second French, and for Madras December shipment 2$\frac{15}{16}$d. Olive is nominal at recent steady rates. Linseed is very quiet, and now sells in moderate amount at the easier rate of 31s. to 31s. 6d. per cwt. for export casks. Cotton Seed is firmly held for 23s. to 24s. per cwt. in export barrels. Spirits of Turpentine are steady and unchanged at 28s. 6d. per cwt.

POTASH SALTS.—Bichromate, 3¼d. per lb. Chlorate, 3¼d. per lb. Cream of Tartar is quiet at 71s. 6d. to 78s. per cwt. Pearlashes have risen nominally to 41s. per cwt. Potashes are at 26s. 6d. to 27s. per cwt., and are very firm. Prussiate, 5½d. per lb. Permanganate, 40s. per cwt.

SODA SALTS.—Bicarbonate, £6 5s. to £7 per ton. Borax, 13s. per cwt. Caustic Soda, 76 to 77 per cent., £11 per ton; 70 per cent., £10 per ton; crystals, £3 2s. 6d. to £3 7s. 6d. per cwt. Nitrate, 9s. 3d. to 9s. 4½d. per cwt.

LONDON, THURSDAY, JANUARY 2, 1902.

As might have been expected, business has hardly been resumed yet after the holidays, many firms being busily occupied with the annual stocktaking. If anything, there is perhaps a rather better feeling now as to the possible course of business generally, as compared with that which prevailed at the close of the year, and this better feeling extends more or less to those interested in Chemicals and Drugs; possibly it is more the hope than the belief that we have at least seen the worst as regards this country at least, and the anticipation which is now openly expressed that before very long we shall see a termination of the deplorable struggle in South Africa, which would inevitably mean a revival of trade to a certain extent, may have something to do with the more hopeful feeling which already prevails. There are no changes in value to record. We give below some prices, some of which are more or less nominal in absence of actual business.

ACETANILIDE—Continues in very slow demand, price being unchanged at 8½d. to 10½d. per lb., according to quantity.

ANTIMONY.—Regulus is quoted £32 to £33 per ton, and Crude Japan (Black Sulphide) £17 to £18 per ton, according to brand and quantity.

ASHES.—Pots, 26s. 3d. to 26s. 6d.; pearls, 40s.

CAMPHOR.—Market for crude is fairly steady, there being, however, no business passing at the moment, while refiners are firm at 2s. 2½d. per lb. for Bells and Flowers, with proportionate prices for tablets according to size.

CASTOR OIL.—Belgian, January-June, firsts, £25 15s.; seconds,, £24 15s., barrels free ex wharf, London. Hull made, January delivery, guaranted cold drawn pure pharmaceutical oil, £30 per ton in barrels, 3⅝d. per lb. in cases; firsts, £27 10s. per ton in barrels, 3¼d. per lb. in cases; seconds, £26 10s. per ton in barrels, 3⅛d. per lb. in cases. April-June deliveries (equal monthly quantities): Fists, £26 5s. per ton; seconds, £25 5s. per ton, in barrels, delivered free, ex wharf, London.

CINCHONA BARK.—The shipments of Bark for last month have again been rather full, viz., 1,250,000 Amsterdam lbs. It is thought, however, that at least after present month we may see the quantity of Bark coming forward distinctly reduced. Next

Bark sales in London will be held on January 14, and the next sales in Amsterdam on January 23.

COCAINE.—Makers continue very firm at 20s. 9d. to 21s. 3d. per oz., according to quantity, for the Hydrochlorate in 25-oz. tins. It is said that in view of the firmness of raw material, both Coca Leaves and crude Cocaine, combined with threatened troubles in the chief producing countries, a reduction of price in the near future is hardly probable.

CODEINE.—Makers are very firm at 12s. 3d. per oz. for the pure alkaloid in 100-oz. lots, 9s. 6d. per oz. for the Phosphate, and 10s. 9d. per oz. for the Muriate and Sulphate Salts.

COD LIVER OIL.—Market is very steady, with, however, practically nothing doing at the moment. Prices remain nominally 70s. to 75s. per barrel, according to quantity and brand, for best non-congealing 1901 Norwegian oil, in tin-lined barrels of 25 gallons each.

GLYCERIN.—Crude is very quiet; same may also be said of the refined article, which is still quoted 63s. to 65s. per cwt., according to quantity, for best English makes of the 1260 SG quality, in tins and cases.

MORPHINE—Quiet and unchanged at 4s. 9d. to 5s. per oz., according to quantity, etc., for the Hydrochlorate powder, and 2d. per oz. more for the crystalline Salt.

OILS (FIXED) AND SPIRITS.—Linseed Oil steady, quiet: London spot pipes, £29 15s. to £30; barrels, £30; month, £29 5s.; January-April, £27 5s.; May-August, £25 15s.; Hull spot naked, £28 5s.; January-April, £26; May-August, £24 10s. Rape Oil steady: Ordinary Brown on the spot barrels, £26 10s.; January-April, £26 10s.; English refined spot, £28; Ravison naked spot, £24 5s.; January-April quoted £24. Cotton Oil steady: London crude spot, £21; December-April, £21; refined spot, £22 10s. to £23; Hull naked refined spot, £21; January-April, £21 2s. 6d.; May-August, £22; crude spot, £19 17s. 6d.; January-April, £19 17s. 6d.; May-August, £20 10s. Olive Oil: Mogador, £34; Spanish, £35 10s. to £39, as to quality; Levant, £35 to £37. Cocoanut Oil firm: Ceylon spot, £32 10s.; January-March, £31, c.i.f.; February-April, £31, c.i.f.; March-May, £30 10s., c.i.f.; Cochin spot, £37; January-March, £36 15s., c.i.f.; March-May, £34 10s., c.i.f. Palm Oil: Lagos on the spot, £26 10s Lubricating Oil: Pale American spot, 6s to 9s.; black, 5s. to 6s.; Russian black, 5s. to 6s. 6d.; pale, 7s. 1½d. to 10s. Turpentine quiet: American spot, 27s. 3d.; February-April, 27s. 6d. to 27s. 7½d.; May-August, 28s.; September-December, 28s. 3d. to 28s. 6d. Petroleum Oil easier: Russian spot quoted 6⅛d. to 6½d.; American spot, 6⅞d. to 7⅛d.; water white, 8d. to 8⅛d.; refined Roumanian on spot, 5⅞d. to 6⅛d. Petroleum Spirit: American ordinary, 7½d.; deodorised, 7¾d.

OPIUM.—Market here is quiet but steady, there being no business passing in the article at the moment. Price in Smyrna is also unchanged.

PARAFFIN WAX.—Crude, 2d. to 2½d.; refined, 3½d. to 3¾d.

PHENACETIN.—The combined makers still quote 4s. 3d. to 4s. 9d. per lb. for both crystals and powder, according to quantity. Outside makes are, however, being offered at somewhat below these figures.

PITCH—7s. 6d.

QUICKSILVER—Unchanged at £8 17s. 6d. per bottle from the importer.

QUININE.—The makers so far made no change in their price, which remains at 1s. 2d. per oz. for the sulphate for 1,000-oz. lots in 100-oz. tins. In the speculative market the price has weakened somewhat during the past day or two, B&S and/or Brunswick being now quoted 1s. 1¼d. per oz., with, however, but few sellers thereat. Probable future of the article would appear to depend almost entirely on the extent of the shipments of Cinchona Bark from Java during next few months.

ROSIN.—Common strained spot, 4s. 9d. to 5s., ex wharf; and for shipment, 4s. 3d., ex ship terms, January-March steamer or sailer.

SENEGA ROOT.—Market is quiet, but steady, price being nominally 2s. 4d. to 2s. 6d. per lb., according to quantity, etc. It is thought, in view of the fact that yield of last crop must have been tangibly below average consumption, that we must inevitably see considerably higher prices for this root before next crop can become available.

SHELLAC.—With holidays in Calcutta the market here has been very quiet, and business in all positions has been suspended, but the tone rules steady. Futures continue inactive.

Call prices.	Sellers	Buyers.
January ....TN	125s. 0d.	122s. 0d.
February	126s. 0d.	123s. 0d.
March	127s. 0d.	125s. 0d.
April	128s. 0d.	125s. 0d.
May	129s. 0d.	126s. 0d.

The usual Calcutta shipments have not been received, owing to holidays there. The landings in London in December were 1,526 chests, against 4,050 chests, the deliveries 2,146 chests, against 3,141 chests, and the stock on December 31, 29,086 chests, consisting of 21,760 chests Orange, 2,172 chests Garnet, and 5,154 chests Button, against 36,718 chests last year.

Statement of the Landings, Deliveries, and Stocks of Shellac in the last three years:—

	1901.	1900.	1899.
Landed .... chests	37,571	41,779	45,955
Delivered	45,203	46,660	53,424
Stock, Dec. 31	29,086	36,718	41,[illegible]

SPICES.—There has been no auction this week, and a holiday tone pervades the market, with practically no business doing. Cloves: January-March delivery quoted 4 3-32d., and March-May 4 3/16d.

TAR.—Stockholm, 24s. 6d.; Archangel, 17s. 6d.

PUBLICATIONS RECEIVED.

Thirty-Second Annual Report of the State Board of Health of Massachusetts. Pp. liv. + 891. Boston: Wright and Potter Printing Co., State Printers, 18, Post Office Square. 1901. From the Publishers.

Year-Book of Pharmacy, 1901, with the transactions of the British Pharmaceutical Conference at the thirty-eighth annual meeting held in Dublin, July, 1901. Pp. 570. Price 7s. 6d. London: J. and A. Churchill, 7, Great Marlborough Street, W. From the Publishers.

Elementary Ophthalmic Optics. By J. H. Parsons. Pp. 162. Price 6s. 6d. London: J. and A. Churchill, 7, Great Marlborough Street, London, W. 1901. From the Publishers.

Sources, Production, Character, and Uses of Olive Oil. Pp. 48, with Map. London: F. Boehm, 16, Jewry Street, E.C. 1901. From the Publisher.

American Annual of Photography and Photographic Times Almanac for 1902. Pp. 347. Price 3s., post free. London: Geo. Houghton and Son, 88-89, High Holborn, W.C. From the Publishers.

Bonn on the Rhine: Pages from its History and Stray Thoughts on Education. By Professor Senier, of Queen's College, Galway. Pp. 18. Dublin: Edward Ponsonby, 116, Grafton Street. 1901. From the Author.

The Photo-Miniature. A monthly magazine of photographic information. Vol. III., No. 30. Pp. 240-290. Price 6d. London: Dawbarn and Ward. October, 1901. From the Publishers.

London University Gazette. Published by authority. Vol. I., No. 1. Saturday, November 23, 1901. Pp. 11. Price 2d. Annual subscription, 5s. London: University of London, South Kensington, S.W. From the Principal.

West Indian Bulletin. The Journal of the Imperial Agricultural Department for the West Indies. Vol. II., No. 3. Pp. 175-261. Price 6d. London: Dulau and Co., 37, Soho Square, W. 1901. From the Commissioner of Agriculture.

LONDON GAZETTE NOTICES.

PARTNERSHIP DISSOLVED.

Frank Arthur Spreat, Robert Bruce Ferguson, and Philip Wilmot, general medical practitioners, of Whetstone, Friern Barnet, and New Southgate.

RECEIVING ORDERS IN BANKRUPTCY.

Cook and Co., mineral water manufacturers, High Street, Manningtree, Essex.

Henry Halkett Crickitt, surgeon, formerly of Rookwood, Merstham, now of South Lodge, Merstham.

MARTELL'S THREE STAR BRANDY

THE LANCET, 22nd July, 1899, says:—
"Shows excellent features on analysis, while the evidence of taste is distinctly in favour of the description that it is an old matured grape spirit. This brandy may be described as particularly suitable for medicinal purposes."

DIARY OF THE WEEK.

Monday, January 6.

SOCIETY OF CHEMICAL INDUSTRY, Burlington House, Piccadilly, W., at 8 p.m.—Report of the Joint Arsenic Committee of the Society of Chemical Industry and of the Society of Public Analysts; "The Retarding Influence of Aldehydes on the Maturation of Spirits," by Professor J. T. Hewitt.

Tuesday, January 7.

MIDLAND PHARMACEUTICAL ASSOCIATION, Great Western Hotel, Birmingham, at 7.30 p.m.—Social Evening (Ladies' Night).

ROYAL INSTITUTION, Albermarle Street, Piccadilly, W., at 3 p.m.—"Electric Oscillations and Electric Waves," by Professor J. A. Fleming (Lecture V.).

Wednesday, January 8.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, London, at 11 a.m.—Meeting of the Council.

CHEMISTS' MANAGERS' AND ASSISTANTS' SOCIETY OF GREAT BRITAIN, Horse Shoe Hotel, at 8 p.m.—Smoking Concert and General Meeting.

MANCHESTER PHARMACEUTICAL ASSOCIATION.—"Pharmaceutical Education," by J. Grier.

NEWCASTLE-ON-TYNE AND DISTRICT CHEMISTS' ASSOCIATION, Hotel Metropole, West Clayton Street, at 8.30 p.m.—"Chromatic Photography,' by A. Payne.

ROYAL GEOGRAPHICAL SOCIETY, The Theatre, Burlington Gardens, W,. at 4.30 p.m.—"Waves," illustrated by Lantern Slides and Cinematograph, by Dr. Vaughan Cornish.

YOUNG CHEMISTS' ASSOCIATION, Lockhart's Cafe. Grainger Street, Newcastle-on-Tyne, at 8 p.m.—President's Address and Discussion on "Is our Calling a Trade or Profession," opened by W. Sims.

Thursday, January 9.

CHEMISTS' ASSISTANTS' ASSOCIATION, 73, Newman Street, W., at 8.30 p.m.—Musical and Social Evening.

ROYAL INSTITUTION, Albemarle Street, W., at 3 p.m.—"Waves and Ripples in the Æther, by Professor J. A. Fleming (Lecture VI.).

TRADE NOTES.

MESSRS. PARKINSON AND SON, shop and laboratory fitters, of Southampton Row, W.C., have acquired the business of the well-known firm of George Treble and Son, which was established more than sixty years since.

TENASITINE.—Messrs. Kay Brothers, Limited, Stockport, are offering a new, handy, tenacious cement, put up in collapsible tubes, to retail at sixpence each. It supersedes the glue-pot for home use, and with it any person can mend broken articles of glass, wood, china, earthenware, jewellery, and hosts of other things too numerous to mention. Tenasitine requires no heating or preparation whatever. All that is necessary is to squeeze the cement in a thin layer over the broken edges, press together, and leave to set.

CUCUMBER EMULSION
under one name or another is still the favourite preparation for the toilet
It is best prepared by using
ROUSE'S CUCUMBER PASTE
which produces a uniformly good article, and saves trouble, time, and temper. Other methods give variable results, and will be avoided by chemists who wish to obtain and maintain a sale for this preparation.
½-lb. jars (=3 lb. Emulsion), 2/3; 1-lb., 4/3; 7-lb., 25/-, post free
Full directions and attractive labels and handbills in crimson and black free with each jar, also formulæ for Milk of Roses, etc., etc.
N.B.—Cucumbers actually enter into the manufacture of Rouse's Cucumber Paste.
ROUSE BROS., 61, Charlotte St., LONDON, W.

BUY FROM THE DIRECT IMPORTERS
SPONGES
FOR CHEMISTS' TRADE.
I. & M. COHEN
Sponge Merchants, Importers and Exporters,
Contractors to H.M. Government,
35 & 54, HOUNDSDITCH, & 66, ST. MARY AXE
LONDON, E.C.
Every Description always on hand.

DISSOLVED . . HAEMOGLOBIN CAPSULOIDS
THE LANCET of August 11th, 1899, says:—
"The administration of Iron in this form is satisfactory. To not a few the appearance of Haemoglobin is repulsive. Capsuloids meet this objection, and evident care is devoted to their preparation."
CAPSULOIDS are so largely prescribed by Physicians
BECAUSE—They contain only pure dissolved Haemoglobin scientifically extracted from carefully selected fresh blood.
BECAUSE—They never produce the slightest nausea, like most Haemoglobin mixtures and powders, are pleasing to the eye, and easily swallowed even by young children, and furnish exact doses.
BECAUSE—Anæmia and chlorosis, and all similar conditions of blood, are rapidly cured by taking them.
Capsuloids are sold in boxes of 100 for dispensing only.
THE CAPSULOID COMPANY, 31, SNOW HILL, LONDON.

Notices to Correspondents.

ALL COMMUNICATIONS FOR THE 'PHARMACEUTICAL JOURNAL' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 5, Serle Street, Lincoln's Inn, London.

CONTRIBUTIONS sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

CORRESPONDENTS should write in ink, on one side of the paper only, and must authenticate the matter sent with their names and addresses, though not necessarily for publication. No notice can be taken of anonymous communications.

DRAWINGS FOR ILLUSTRATIONS should be executed twice the desired size, clean sharp lines being drawn with a pen and liquid Chinese ink. Shading by washes is inadmissible. Photographs can be utilised in certain cases.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Alcock, Ashton, Bennet, Blore, Boehm, Bromley, Brunt, Cassie, Chubb, Cooke, Deacon, Dunlop, Gibson, Gilmour, Good, Hill, Hudson, Johnson, Ling, Millidge, Moorhouse, Newsholme, Newton, Phillips, Tippetts, Trick, Turner, Wills, Wootton.

PHARMACEUTICAL JOURNAL.

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LONDON: SATURDAY, JANUARY 4, 1902.

JOHN THISTLEWOOD DAVENPORT.

By the death of Mr. J. T. Davenport, at the age of 84, on December 29, has passed away the last past-President of the Pharmaceutical Society belonging to the pharmaceutical chemist era of qualification. Mr. Davenport became a member of the Society in 1842; was a member of Council from 1851 to 1865, and acted as an examiner from 1867 to 1875. He occupied the position of Vice-President of the Society from 1853 to 1855, and was President in 1855-6. Mr. Davenport was articled as a pupil in 1833 to Mr. Richard Ward, chemist and druggist, Great Russell Street, London, and eventually purchased that business in 1839. During his early career he attended lectures on chemistry at the London University under Professors Turner and Graham. In addition to the dispensing business, Mr. Davenport engaged in the manufacture of pharmaceutical chemicals, especially the scale preparations of iron and quinine. A stranger passing the unpretentious establishment in Great Russell Street would never have suspected that for years it had been a centre of high-class pharmacy. The development of the chlorodyne industry has left its mark upon commercial enterprise and bears witness to energetic business tact. Though Mr. Davenport had long retired from public work, he reappeared among his London friends on occasions of special pharmaceutical interest. As was pointed out in the Journal four years ago, some yet remember him as an able and impartial examiner. In the days when the Preliminary Examination was in its infancy he would listen with patience whilst a candidate endeavoured to construe a small Latin book, based upon Scripture history and recording the patriarchal age. When the examination was remodelled, Mr. Davenport undertook the reading of autograph prescriptions with a fairness worthy of imitation.

JOHN THISTLEWOOD DAVENPORT.

At the time of his election as President, some harassing litigation about new Bye-laws was pending, but that was shortly terminated and the Council was once more at liberty to attend to the objects for which the Society was established—the promotion of facilities for acquiring knowledge, protection of the rights of members, and cultivation of harmony and a disposition to co-operate for the general good. In his annual address he pointed out that the advanced position, increased public recognition, and improved educational status of the pharmaceutical body at that time had been the result of the well-directed labours of the Society, and afforded encouragement to persevere. Brief reference was also made in the address to the Pharmacopœia Committee appointed by the Council of the Society during Mr. Deane's presidency. Though Richard Phillips had acted as editor of two editions of the London Pharmacopœia, he had long ceased to be engaged in the practice of pharmacy when he undertook the work of revision and, prior to 1854, practising pharmacists had never ostensibly taken part in the preparation of a pharmacopœia in this country. In the annual report of the Society for 1854, reference was made to the fact, as a source of complaint on the part of pharmaceutical chemists, that the pharmacopœia by which they were expected to compound their preparations was compiled without any appeal to their practical experience. It was also pointed out that "they frequently suffered inconvenience, and sometimes incurred discredit, in consequence of changes in the nomenclature and ambiguous terms introduced into that work; their daily manipulations at the counter and in the laboratory enabled them to point out such defects and occasionally to suggest improvements, and yet they were never officially communicated with on the subject." But by the efforts of the Pharmaceutical Society, a remedy was provided for that anomalous position, and it was rendered possible for the services of pharmaceutical chemists to be called into requisition by the medical authorities entrusted with the compilation of pharmacopœias. The first step in that direction was taken by the College of Physicians, which body, in view of the publication of a new edition of the London Pharmacopœia, made application to the Pharmaceutical Society for assistance, and on August 2, 1854, the Council of the Society constitued itself a Pharmacopœia Committee, with a working sub-committee of seven. The first report of the sub-committee was presented to the College of Physicians towards the close of Mr. Davenport's year of office as President, and the Pharmaceutical Society was subsequently requested by the General Medical Council to allow the work of its pharmacopœia sub-committee to be continued, so that the first official recognition of the Society in connection with the British Pharmacopœia may be said to date from the time of Mr. Davenport's presidency.

ANNOTATIONS.

The Drug Habit furnishes a *Daily Mail* writer with a subject for an article which, by the aid of much ignorance, is made even more sensational than that which recently appeared in the same paper on the sale of poisons (see *P.J.* [4], **13**, 703). The statements it contains are either true or untrue: if there be any sufficient basis of truth to justify them they cast a very damaging imputation upon all concerned, and if such a basis is wanting they amount to a shameful libel. The whole article furnishes evidence of the fact that the chemist's shop has other dangers than those connected with the sale of poison. In that sense the question suggests itself, in regard to the alleged narrators of the startling information supplied to the *Daily Mail*, whether their "moral centre" must not have undergone considerable dislocation before they could have so flippantly recorded their interested participation in practices which their own accounts show that they hold to be pernicious and reprehensible? The effort to make chemists respectable, inaugurated sixty years ago, has since been creditably continued, but if the representations of the writer in the *Daily Mail* of last Wednesday are to be accepted as an indication of the result produced, the question may indeed be asked, "Are we progressing?"

The 'Year-Book of Pharmacy' for 1901 has come to hand somewhat later than usual, but the delay is fully accounted for by the changes which have taken place in the editorial staff, and the volume should be none the less welcome for arriving a few weeks late, the more especially as it appears likely to prove even more useful than its predecessors. The new editor of the 'Year-Book' proper—Mr. J. Oldham Braithwaite—is to be congratulated upon a very practical improvement which he has introduced in the arrangement of the numerous abstracts of scientific papers, the whole of the abstracts in each section being now arranged in alphabetical order. The advantages of such a method of arrangement are so manifest that readers will probably wonder why it has not been adopted before. The introduction covers thirteen pages, and conveys a very fair idea of work accomplished in the domain of pharmacopedy during the twelve months which terminated at the end of June last. The section on chemistry occupies a hundred and ten pages, that on "materia medica"—including notes on new remedies and new facts about old ones—occupies forty-five, and thirty-seven are devoted to pharmacy, this third section being restricted to notes on galenical preparations, etc. Part four consists of the usual "Notes and Formulæ," and includes many useful recipes. The 'Transactions of the British Pharmaceutical Conference' are now edited by Messrs. F. Ransom and E. Saville Peck—the two hon. gen. secretaries. Tables of useful information for pharmacists are again given at the end of the volume and, as usual, there is a capital index.

The Government Visitor's Report on the examinations of the Pharmaceutical Society published in Edinburgh during the year 1901 is printed at page 8 of this week's Journal, and is of especial interest as embodying Dr. Balfour Marshall's opinions on the examinations, as well as showing the numbers of candidates rejected in particular subjects. The improvement previously reported in the percentage of passes at the qualifying examination has been maintained, and is said to be even more marked than the figures seem to show, as the standard of work over the whole range of examination subjects has been better, owing no doubt to more thorough training. "This year the percentage of passes has suddenly risen to 44·3 per cent., or nearly 9 per cent. over those of last year, and the candidates have done even better than those figures seem to indicate, as the number who obtained marks in each subject, but only failed in the aggregate, represents nearly 41 per cent. of the total failures." The practical work also has been much better done than usual, 69 per cent. being successful in that portion of the qualifying examination, as against 62 per cent. last year. In the oral part of the examination the greatest improvement has been in botany, students evidently giving more attention to that subject than formerly, and being much better prepared than in former years. Chemistry still remains the subject which presents the greatest difficulty to the student. The decided general improvement during the year is shown to have been coincident with the increase in the examination fee, and it is suggested that it is probably due to the influence of that increase in preventing students presenting themselves before the examiners until they consider they are sufficiently prepared. Dr. Balfour Marshall expresses himself as being strongly of opinion that were a compulsory curriculum instituted there would be a still more marked improvement in the examination results, as students would thus be compelled to undergo a thorough systematic education in recognised schools of pharmacy, and so avoid that waste of energy by which students, during a three or six months' "cram," commit to memory a number of facts which they do not understand and quickly forget.

The Sale of Poisonous Weed-Killers and Sheep Dips was recently referred to at a meeting of the Rye Farmers' Club in terms which betrayed some ignorance of the manner in which the sale of certain poisonous articles is legally restricted. Thus, the lecturer—a Mr. Mathews— is reported to have said that the Pharmaceutical Society had, some months ago, prosecuted a person for selling poisonous weed killer, because he was not a member of the Society, and did not hold a proper certificate. He then went on to say that he thought it very inconvenient that farmers should have to go to a duly qualified chemist to buy any weed killer or sheep dip, and that there ought to be free trade in the sale of those "useful poisons." The lecture in which those statements were made was reported in the *South Eastern Advertiser* of December 21, and in a letter published in the following issue of that paper the misleading nature of the statements was clearly shown by the Secretary of the Pharmaceutical Society—Mr. Richard Bremridge.

In the First Place, Mr. Bremridge points out that Mr. Mathews was probably not aware when he spoke that the ground for prosecution in the case referred to was that the seller had contravened the provisions of the Pharmacy Act—a measure to regulate the sale of poisons—which was passed with a view to securing the safety of the public, as the result of the deliberations of a Select Committee of the House of Commons. The person prosecuted was not qualified as required by the Act, and was not registered as a fit and proper person to sell poisons. The fact of his not being a member of the Pharmaceutical Society did not enter into the question, and had absolutely nothing whatever to do with it. With regard to the proposal that there should be free trade in the sale of poisons, Mr. Bremridge asks what special virtue there would be in allowing everybody to sell poisons freely, when the whole of the agriculturists' demands can be quite easily supplied by the sixteen thousand persons specially registered in accordance with the Statute for that particular purpose. Moreover, the indiscriminate distribution of arsenical weed killers is fraught with grave danger, while, in regard to sheep dips, those are supplied by registered chemists and druggists in every country town in Great Britain, so that there does not appear to be any logical ground for advocating the unrestricted sale, by unqualified persons, of such preparations when of a poisonous nature.

The Term "Infamous Conduct" is, not unnaturally, objected to by medical practitioners who have the misfortune to fall under the ban of the General Medical Council, and the recent action of that body in the case of Mr. Rendall, of Yarmouth, is likely to be vigorously contested by the Friendly Societies. According to the Press Association, a Bill will shortly be promoted in Parliament to protect medical men who are now professionally engaged for the various medical aid societies, and it is stated that a special clause in the measure will make it libellous for the General Medical Council to describe as "infamous" conduct on the part of any qualified man, which is merely a breach of professional etiquette. Mr. Rendall has been held to be guilty of "infamous conduct in a professional respect" for having been indirectly connected with a society which is alleged to canvass for patients.

An American Medical Company, which has been the subject of several inquiries addressed to the Editor, appears to carry on an extensive business on somewhat peculiar lines. The advertisements of the company in English newspapers offer medical treatment "absolutely free" and, when any reader of the advertisement writes to describe the symptoms in his particular case, he receives in return a sympathetic letter, signed by the "medical director" of the company, together with a small box of gelatin capsules which contain compressed tablets of different colours surrounded by an oily medium. The recipient of this pretty gift is informed that the writer of the letter has made a careful examination of his case, which he thoroughly understands, and that the supply of medicine sent should serve for about four days' treatment, the different coloured tablets being taken in turn. But, it is insisted, the case is a very serious one, requiring prolonged treatment, and it is always stated to be necessary that the inquirer should undergo a complete course of treatment at a cost of two pounds or guineas. All inquirers seem to receive letters in identical terms from the "medical director" and, in the event of no fee being sent for the suggested complete treatment, another communication invariably follows the first one, astonishment being expressed that the writer's offer has not been accepted, and a positive undertaking being given that the patient, whatever he may be suffering from, shall be restored to perfect health and strength if he will only pay the two pounds or guineas. Later still arrives a third letter, with which are enclosed a number of testimonials from "grateful patients" who "had suffered for years from what they had been taught to believe were incurable diseases." Most of the testimonials appear to be from persons who have been suffering from sexual disorders, and it is quite evident that a skilfully organised scheme of quackery is being worked on a large scale by the American company in question. It should hardly be necessary to state that readers of the Journal who may be asked for advice on the subject ought to warn the inquirers against taking any of the specimen remedies, or sending any money for the complete course of treatment so strongly recommended.

Waves and Ripples are not exactly synonymous terms, as Professor Fleming was careful to explain at the Royal Institution, London, on Saturday last. Waves in water are due to a disturbance propagated through that medium, wave-motion being the result of the motion of a series of particles which perform the same regular movement one after another, the character of waves varying according to the different ways in which the particles move. In a sea-wave each particle of water moves in a circle, but in canals the waves differ from those on the sea, owing to the different nature of the motion of the water particles, which move in a very flat, oval curve. Again, the velocity of canal waves depends on the depth of the water, not as at sea on the distance of the waves from each other. The deeper the water the quicker the wave travels, and its speed is equal to that which a stone would acquire in falling through a distance equal to one-half the depth of the canal. Wave-motion in water is the result of gravitation, and the waves thus produced are distinguished as gravitational waves. In ripples, on the other hand, the motion depends on surface tension. The surface of water standing in an open vessel is covered, as it were, with a skin which is in a state of stretch or tension, and if a needle be very delicately placed on the surface of water, it will float by virtue of the surface tension, its weight not being sufficient to break through the skin. Again, if a small piece of paper floating on water be just touched with spirit of wine at one side it will fly off in the opposite direction, because the spirit destroys the surface tension at one point and the tension of the rest of the surface pulls the paper away. The formation of ripples, or capillary waves, depends on the resistance to puckering or pleating offered by the stretched surface of the water. Wave-motion in water is manifested by the movement which takes place, but sound is also produced by the breaking of the waves and the consequent production of wave-motion in air, while the light by means of which the waves in water are seen consists of further wave-motion in the still more subtle medium named ether. Waves can only exist in a material or medium which has the qualities both of resistance and persistence. For example, water resists being made unlevel. Hence it rises to the same height in the two arms of a U-tube, and, if forced in any way—for instance, by the pressure of air in one arm being made greater than in the other—to stand at different levels, it returns to its level position as soon as the constraining force is removed, but in doing so it overshoots the mark, and, persisting in its motion, gives rise to oscillations.

Can a Company be Indicted? The question was raised at the Surrey Quarter Sessions, held at Kingston-on-Thames on December 31, when Messrs. Pearkes, Gunston, and Tee, Limited, were charged with an alleged infringement of the Merchandise Marks Act by selling butter to which a false trade description had been applied. Mr. Horace Avory, K.C., who appeared for the company, asked the Court to quash the indictment, on the ground that a limited company, as such, cannot appear at Quarter Sessions, and cannot, therefore, be indicted properly. A company, he urged, is a legal entity, and quite distinct from the shareholders who form it. Further, according to the Act, a defendant is liable to be sent to prison. But a Court could not send a limited company to prison. Mr. Clarke Hall, who appeared for the prosecution, held that the magistrates were right in committing for trial, and urged that the words of the Act, "a body corporate," applied properly to a limited company. He was afraid, however, that the case was not one that could be tried at Quarter Sessions, but must be sent to the Divisional Court. Ultimately, the justices decided not to quash the indictment, and adjourned the case until the next sessions.

The Chemists' Ball will be held at the Whitehall Rooms, Hôtel Métropole, London, on Wednesday, January 15. It will be the thirty-sixth of the annual series, and the Hon. Secretary—Mr. Ernest W. Hill, 160, Earl's Court Road, South Kensington, S.W.—will be glad to hear from any pharmacist who may require tickets for himself or friends. The date of the Junior Pharmacy Ball is fixed for Wednesday, February 26. Mr. Ralph L. Cassie who has so long and ably officiated as Hon. Secretary for that ball, is now succeeded by Mr. Percival Trick, Salisbury House, London Wall, E.C., to whom all applications should accordingly be addressed.

The Chain for the presidential badge—which has been provided by representatives of the Presidents of the Pharmaceutical Society during the past sixty years—has now been completed, and we are requested to state for the information of the donors that the President will be invested with it on Wednesday, January 8, at 10.30 a.m., at a private meeting to be held previous to the commencement of the Council business.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

ALMOND OIL.

At the Mansion House Police Court, on December 31, before Alderman Vaughan Morgan, Mr. G. S. Boutall was summoned for selling, at 17, Ludgate Hill. E.C., on November 13, almond oil which was not of the nature, substance, and quality of the article demanded, inasmuch as it contained 100 per cent. of oil other than almond oil. Mr. Vickery prosecuted on behalf of the City health authorities, and Mr. Kibbell defended.

Mr. Vickery stated that the article was labelled oil of almonds, and underneath this was written in Latin "Ol. amygd. dulc. Persic." These two descriptions, he maintained, cancelled one another, and, although he did not allege there was anything absolutely fraudulent, yet when a person asked for oil of almonds, he did not expect to get something about half the price.

Inspector May said he was served by Mr. Beckwith. He asked for 6 ozs. almond oil, and was charged 1s. 6d. He translated the Latin inscription on the label as meaning oil expressed from peach kernels. He asked Mr. Beckwith, "What's the meaning of this? Why do you put two inscriptions on the label?" Mr. Beckwith replied, "To distinguish one from the other."

Mr. Kibbell cross-examined witness as to the exact meaning of the word "persic." Did it not mean Persian—Persian oil of almonds?

The Magistrate: It does not matter whether it means "peach" or "Persian"; the question is whether it is almond oil or not.

To Mr. Kibbell: To the best of his recollection he saw the inscription after paying for the oil, but he could not swear to this.

To Mr. Vickery: Peach kernel oil was about half the price of the genuine.

To Mr. Kibbell: The term "ol. amygd. persic." appeared as a description of almond oil in Allen and Hanburys' price list (produced). It did not appear in the Pharmacopœia, and was therefore not a drug.

To Mr. Vickery: In the list referred to there were two description of almond oil, as on the label. The "persic." oil was 1s. 2d. per lb. and almond oil 2s. 2d. per lb. It might be a trade descriptioin, but that only.

Dr. F. Teed (Public Analyst) supported his certificate. His explanation of the label was that "oil of almonds" meant essential oil of almonds (*sic*), but the Latin description "Ol. amygd. persicaria" meant oil of peach kernels. Squire gave tests for absence of peach kernel oil in almond oil; the latter was strictly forbidden in the B.P. almond oil. The oils quoted in Allen and Hanburys' list were absolutely different articles.

Cross-examined by Mr. Kibbell: If he asked for oil of almonds he would expect to get the essential oil, but if he asked for almond oil he would expect to get the fixed oil (*sic*).

Mr. Kibbell: You state in your certificate that you found "other than almond oil"?—Yes.

Mr. Kibbell: Why did you not specify peach kernel oil?—Because you might say, How do you know it is not apricot kernel oil?

Mr. Kibbell, in opening for the defence, made three points. First, that on the evidence of the inspector what was supplied was not a drug.

The Clerk: You are not entitled to plead that—you supplied oil of almonds. If you wish me to put on record that you ask the magistrate to say that what was supplied was not a drug, I can only add that I am astounded.

Mr. Kibbell: I do ask you to put that down, and you can also add that you are astounded.

Mr. Kibbell, continuing, pleaded, secondly, that a knowledge of the article was brought to the notice of the purchaser before he paid for it, and he could not be said, therefore, to be prejudiced; and, thirdly, that the certificate was not in conformity with Section 18 of the '75 Act, because it neither gave the "parts as under" nor the "percentages of foreign ingredients."

Mr. Beckwith said he was asked for almond oil or oil of almonds—both were the same—and, being under the impression that the term "persic." meant that it was a foreign expressed oil of almonds—Persian oil of almonds—he supplied it to the inspector. He labelled the bottle in front of the inspector, who said, "You need not wrap it up." He took the bottle, looked at it, and said, "I do not think this will do, but I will see." He paid after reading the label.

To Mr. Vickery: He did not think the two descriptions were contradictory. He knew May as a customer, and inserted the Latin description so that May should know exactly what variety of oil he was getting. The word "persic." was a trade description of almond oil. They usually kept the English oil only in stock; they had a different price for that; in this case he charged the smaller price.

The Magistrate, after consideration, said that he dismissed the case upon the facts.

BORIC ACID OINTMENT.

At the Mansion House Police Court, on December 31, Mr. F. Boxall (trading as Hancock and Co.), 128, Fleet Street, E.C., and Mr. C. E. Ison, his manager, were summoned for selling boric acid ointment not of the B.P. strength. Mr. Vickery prosecuted for the City health authorities, and Mr. C. H. Kirby defended on behalf of the Chemists' Defence Association. As Mr. Boxall appeared, the summons against Mr. Ison was withdrawn.

Mr. Vickery said that the analyst's certificate showed the ointment to contain 8·1 per cent. of boric acid and 91·9 per cent. of paraffin ointment.

The Inspector gave formal evidence as to purchase. In reply to Mr. Kirby, he did not know the relative cost of boric acid and paraffin ointment.

Mr. Kirby's points for the defence were that the ointment was properly made according to the Pharmacopœia, and that the deficiency in strength was entirely owing to the difficulty in mixing. The cost of the boric acid was less than that of the paraffin ointment, and it was obviously of no benefit to the defendant to make the ointment deficient in strength, and that the effect of this in using the ointment was not perceptible.

The Magistrate: That is an important point.

Mr. Kirby: I will call evidence to show that the ointment is not less useful although legally deficient.

Mr. Wm. Johnston said he was a pharmaceutical chemist of twenty-eight years' experience. It was impossible to positively guarantee that the ointment would always be right. Owing to sudden changes of temperature causing unequal cooling a little boric acid would drop to the bottom. The ointment was used as an antiseptic dressing, and variations in strength made no difference to its usefulness.

Cross-examined by Mr. Vickery: He was not a medical man, but as a chemist he was obliged to be well acquainted with the therapeutic action of medicines.

Mr. Vickery: The boric acid is ordered to be finely sifted.—Yes.

Mr. Vickery: Then a deficiency of 19 per cent. must be more than accidental?—A deficiency is chiefly due to unequal cooling; it might be made all right ninety-nine times out of a hundred.

The Clerk: This is evidently the hundredth time.

Re-examined by Mr. Kirby: It was impossible to obviate this difference. The ointment contained 8 per cent., and should have contained 10 per cent. He did not consider it serious.

Mr. Boxall said he had had eighteen years' experience, and had never been in trouble before. The assistant who made the ointment had left, and could not be traced.

The Magistrate (to Dr. Teed): Is the ointment as sold equally efficient?

Dr. Teed: Not in my opinion, but it is rather a medical question.

The Medical Officer said the purchaser was injured in two respects. There being a deficiency of boric acid, he was deceived on this point, and also as to its antiseptic value. If an ointment of a definite strength was prescribed an injury might be done if one of a less strength was supplied.

The Magistrate said he could quite understand that it was a question of bad mixing, and was a case for a small penalty. He would therefore impose a fine of 10s. and 14s. 6d. costs.

Sweet Spirit of Nitre.

At Skipton Police Court, on Saturday, December 21, William Daggett, grocer, Skipton, was summoned for selling sweet spirit of nitre which, according to the certificate of the Public Analyst, contained only 0·98 per cent. of ethyl nitrite instead of 1·75 per cent., the minimum allowed by the British Pharmacopœia.—For the defence, William Fowlds, chemist, of Keighley, stated that he supplied the defendant with the bottle of sweet nitre from which the sample in question was taken. It had not been tampered with while in his possession, but the spirit would evaporate each time the bottle was opened, and to a certain extent even if the bottle was kept sealed. The defendant also gave evidence to the effect that he sold the nitre in small quantities, and had not tampered with it in any way. He knew that it lost strength if kept any length of time.—The Chairman said it would be better if small grocers did not sell such articles as sweet spirit of nitre. Defendant would be fined 40s. and costs.

POISONING CASES AND INQUESTS.

Chlorodyne.—On Saturday, December 21, an inquest was held concerning the death of Henry Charles Baker (63), manager of a coffee tavern at Battersea. The evidence showed that deceased had suffered from a cold, and that on the previous Wednesday night his wife gave him "forty drops" of chlorodyne. Shortly afterwards she found him on the floor of the bedroom snoring heavily; she aroused him, and he got into bed again. Becoming alarmed at his condition she and a lodger gave him an emetic, having discovered that he had taken more chlorodyne. Every effort was made to keep him awake, but death occurred on Thursday, December 19, from heart failure, caused by an overdose of chlorodyne. A verdict of "death from misadventure" was returned.

Chloroform.—An inquest was held at Battersea on Monday, December 30, concerning the death of Dr. Henry Carrington, of 8, Battersea Rise.—The evidence showed that deceased had lately complained of overwork, and that he was in the habit of putting a drop of chloroform on his handkerchief and inhaling it on going to bed. "Many doctors do that," said his sister.—"Yes," remarked the Coroner, "they work hard and sleep little, and sometimes are very badly paid into the bargain."—The jury returned a verdict of death by misadventure.

Laudanum.—An inquest was held at Cork on Thursday, December 26, respecting the death of Lieut. Barnard R. S. Winter (35), of the guardship, "Empress of India," stationed at Queenstown. The evidence was to the effect that on Christmas eve deceased purchased an ounce of laudanum at a chemist's shop in Cork, and retired to bed at the Imperial Hotel, apparently in good health and quite cheerful. The next morning he was found dead in bed, a tumbler smelling strongly of laudanum being near the bed-side. There was no evidence that deceased was in trouble of any kind. A verdict of "death from an overdose of laudanum" was returned.

Laudanum.—An inquest was held at Bradford, on Friday, December 27, on the body of the two months old child of Sarah Fletcher, a hawker. The evidence showed that on Monday night, December 23, the child was taken ill, and the grandfather administered a "drop" of laudanum. Death occurred on Christmas Day, and was attributed to acute bronchitis accelerated by the administration of laudanum. The jury, in returning a verdict in accordance with the medical evidence, expressed the opinion that the laudanum had been given rather negligently, and it was stated that carelessness on the part of parents in the treatment of children, in the opinion of the jury, contributed largely to infantile mortality.

Oxalic Acid.—At Rochester, on Tuesday, December 31, a young lady named Emily Backman, a draper's assistant, being slightly indisposed, went to a cupboard to get some Epsom salts, but by mistake took some oxalic acid. Emetics were administered, but she died shortly afterwards.

Perchloride of Mercury.—An inquest was held at Westminster on Wednesday, December 18, into the circumstances relating to the death of Percy Raw (19), son of Mr. G. H. Raw, of Albert Court, Kensington. The evidence showed that deceased arrived at Southampton on the Union Castle liner "Scot" on Saturday, December 14, as a first-class passenger, and it was stated by the ship's surgeon that on the previous Thursday morning, during very heavy weather, deceased had taken a solution of perchloride of mercury in mistake for medicine. It was also stated that Mr. Raw had some tabloids of perchloride of mercury which he was in the habit of putting in water overnight, the glass containing the liquid being placed in a rack, which also contained his medicine and a water bottle. The ship experienced good weather until the Thursday morning, and when he made the mistake it was probable that Mr. Raw was a little sea-sick. Everything was done that could be done to counteract the effect of the poison, and on his arrival at Southampton deceased was considerably better, but shortly after reaching home he collapsed, death occurring from the effects of perchloride of mercury poisoning.—A verdict of "Death from misadventure" was returned.

Morphine and Chloral.—An inquest was held at Bromley Sick Asylum, on Thursday, December 26, concerning the death of Lawrence Eleazar Keyes (59), commercial traveller, of British Street, Bow. According to the evidence of the widow, deceased had suffered from heart disease and sleeplessness for several years and had been attended by a doctor who had given him soothing medicine. On Tuesday morning, December 24, she could not arouse him. Dr. Hastings, who was sent for, pronounced life extinct. The medicine referred to was to make him sleep, and deceased measured it out in a small glass. Dr. Edwin Burchell Hastings, of Mile End Road, stated that Mr. Keyes had been dead several hours when he saw him. He was informed that deceased had taken a sleeping draught which contained morphine, chloral, and potassium bromide. He could not say whether Mr.

Keyes had taken an overdose, or whether death was due to syncope brought on by a heavy supper. The Coroner directed the doctor to make a post-mortem examination, and having completed the examination, Dr. Hastings said he was satisfied that death was due to narcotic poisoning. The Coroner pointed out the great danger in taking sleeping draughts unless measured out with great care. The jury returned a verdict of death from misadventure.

Syrup of Poppies.—An inquest was held at Newark on Monday, December 23, respecting the death of Nevile Roberts, aged seven weeks, the son of a pork butcher. According to the evidence, the child had suffered from diarrhœa, and a friend of the mother advised that a dose of "syrup of rhubarb and poppies," which she had used with excellent results for her own children, should be given to the child, and she lent the mother a bottle of the mixture. Half-a-teaspoonful was administered, but noticing that the little one fell into an unnatural sleep, a doctor was sent for, and he came to the conclusion that the child was suffering from opium poisoning. Death occurred shortly afterwards.—Mr. Priestley, pharmaceutical chemist, stated that he sold the mixture in question. Syrup of poppies was scheduled as a poison, but it was not necessary to obtain the signature of the purchaser. The dose for an adult was given on the bottle, but it was not usual to state the dose for children, as it would vary according to the age and constitution of the child.—The jury, in returning a verdict of "Death from opium poisoning," expressed the opinion that more stringent regulations should be made in connection with the sale of such preparations as syrup of poppies.

Obituary.

Briggs.—On December 23, William Briggs, Chemist and Druggist, Trinity Square, S.E. Aged 71. Mr. Briggs had been a member of the Pharmaceutical Society since 1891.

Davenport.—On December 29, at Hove, Brighton, John Thistlewood Davenport, Pharmaceutical Chemist. Aged 84. Mr. Davenport had been a member of the Pharmaceutical Society since 1842, and had served the Society in the various capacities of member of Council, examiner, vice-president, and president.

Pennington.—On December 25, Thomas Pennington, Chemist and Druggist, Bury. Aged 70.

Pickup.—On December 20, Arthur Pickup, Chemist and Druggist, Bacup. Aged 74.

Simpson.—On December 22, at Manse Cottage, Shotts, Lanarkshire, N.B., after a brief illness, John Simpson, father of Dundas Simpson, Chemist, Redditch. Aged 63 years.

PLYMOUTH, DEVONPORT, STONEHOUSE AND DISTRICT CHEMISTS' ASSOCIATION.

The annual ball of this Association was held on Wednesday evening, January 1, at Stonehouse Town Hall. Between 500 and 600 invitations were sent out to chemists, their wives and friends, and the spacious hall was well filled, the event being, as usual, a distinct success. The platform, upon which was Mr. L. Brock's band, which supplied the music, was tastefully decorated with palms and plants, and the staircase, corridors, and anterooms were prettily furnished. Dancing was enjoyed from eight o'clock to two on Thursday morning, there being eighteen dances and a couple of extras. Supper was provided during the evening, as well as light refreshments. Occupying a prominent position in the hall was the pestle and mortar—the symbol of the trade—presented to the Association some years since by Mr. J. Kinton Bond, B.Sc., whilst an ancient mortar (bell) was utilised to announce the dances. The floor was in excellent condition. The arrangements were made by a committee consisting of Messrs. C. T. Weary (President), J. H. Bailey, A. D. Breeze, Jas. Cocks, D. G. Fairweather, F. A. Goodwin, E. W. H. Green, F. W. Hunt, N. F. Lakeman, C. J. Park, F. A. Spear, G. W. B. Swainson, G. D. Turney, W. H. Woods, with Mr. F. Maitland as the energetic Hon. Secretary.

AUSTRALASIAN NEWS-LETTER.

(From Our Melbourne Correspondent.)

The New Commonwealth Tariff has occupied the attention of Australian pharmacists of late to the practical exclusion of other subjects, such as reciprocity, etc. At a meeting of leading pharmacists held at the College of Pharmacy, Melbourne, on October 23, the following were elected to form a committee to formulate and urge upon the Federal Government certain amendments which were considered necessary, viz., Messrs. E. Norton Grimwade, S. Fripp, R. P. Francis, H. Francis, H. A. Woolnough, E. T. Church, G. Cheshire, C. Markell, C. E. Towl, and S. S. Strutt. Several meetings of the Committee having been held, a deputation consisting of Messrs. H. Francis, H. A. Woolnough, E. T. Church, and H. Shillinglaw (Registrar of the Victorian Pharmacy Board), waited upon the Comptroller-General of Customs, and submitted several amendments, prefaced with a note to the effect that they were endorsed by the pharmaceutical authorities of South Australia, Queensland, and Tasmania, as well as by Victorian pharmacists. So far as the Tariff has been considered in the Federal House of Representatives, the Government appears to have been considerably influenced by the recommendations, and various modifications have been introduced, which, it is hoped, will be followed by others.

The Pharmaceutical Society of Australasia some time ago forwarded a recommendation to the Victorian Pharmacy Board suggesting the desirability of practical pharmacy being included in the compulsory curriculum. The matter has been carefully considered by the Board, with the result that at its November meeting it decided that, while fully in accord with the Society in the matter, it was found that under Section 88, Sub-Section 4, no powers were given for adding additional subjects to the curriculum prescribed under that Section. This practically means that before effect can be given to this desirable innovation the Act will have to be amended. Apropos of which, it may be added, that in a pharmacy Act Amendment Bill recently introduced to the Queensland Parliament, it is proposed, among other things, that the curriculum and examination should be prescribed by by-law, instead of being made part of the Act. The objection has been made that this might encourage and offer opportunity for too frequent and undesirable changes, but in view of the difficulty experienced in Victoria it does not appear to be without its advantages.

The Pharmacy Board of Victoria has had recently under consideration a somewhat complicated case involving the question as to the rights and privileges of medical practitioners in connection with pharmacy. The facts, as reported by the *Australasian Journal of Pharmacy*, are that a legally-qualified medical practitioner was appointed executor under the will of a deceased pharmaceutical chemist, and had registered himself under the Registration of Firms Act as one of the proprietors of the business which was carried on under the name of the deceased person by the medical man, although he was not personally interested in the business or in attendance at the shop. Under Section 95 of the Medical Act an exemption is made that the Act shall not extend or interfere with the business or with any rights and privileges of any legally-qualified medical practitioner. Under Section 97 of the Act it is provided that any person not being a registered pharmaceutical chemist who takes, uses, or exhibits the name or title of chemist shall be liable to certain penalties. In this case the medical practitioner referred to was not a registered pharmaceutical chemist, and it was contended that the exemption under Section 95 did not over-ride the provisions of Section 97. Considerable correspondence had taken place on the subject, and the medical man referred to had been urged to place the matter on a proper legal basis, but had declined to do so. The case had been submitted to counsel for an opinion as to the position taken up by the medical man referred to, and counsel advised that the rights and privileges expressed by Section 95 did not warrant the keeping of an open shop as a trustee under the will of a deceased pharmaceutical chemist, and that he was therefore liable to be proceeded against under Section 97. As every effort had been made without avail to bring about an amicable settlement of the matter, it was resolved, at a meeting of the Board, held on November 13, that proceedings should be taken.

THE AUSTRALIAN FORMULARY.—Good progress is being made with the proposed Australian formulary of unofficial preparations. At the November meeting of the Pharmaceutical Society of Australasia, after Mr. Rankin had reported on the result of his interview with the Council of the Pharmaceutical Society of New South Wales (referred to in previous notes), a proof of the publication up to the present time was submitted, and it was resolved that Messrs. Bailey and Rankin should further revise and add to it; also that a copy should be sent to the New South Wales Committee, and that when approved the pamphlets be printed for distribution among pharmacists and the medical profession.

THE REGISTERED PHARMACISTS' SOCIETY of New South Wales has apparently some difficulty in collecting the very necessary "filthy lucre" from its members. At the November meeting of the Council a circular letter was approved asking members in arrear to be good enough to forward their subscriptions, or to return the diplomas issued to them as members. According to Section 67 of the regulations—"Every person ceasing to be a member of the Society shall return forthwith to the Secretary the diploma issued to him, on a written demand being made for the same. 68. All persons pirating or imitating or improperly using any diploma or any or either of the certificates or the common seal of the Society or falsely holding themselves forth to the public by means of advertisements, handbills, labels, circulars or otherwise as members of the Society will be subject to legal proceedings, and the Council shall from time to time order the same at their discretion."

THE PHARMACY BOARD OF NEW SOUTH WALES considered, at its November meeting, a communication from a Mr. E. J. Cole, a registered dentist, submitting a book of formulæ for their approval, and stating that the amount of poisons in each of the recipes was very small. After some discussion it was resolved that the applicant be informed that if he sells any mixtures containing poisons he will, on this being established, be prosecuted under the Poisons Act. At the same meeting a report from the Board of Health was received, stating that Powell's Balsam of Aniseed does not contain any scheduled poisons. More interesting still was a communication from the Treasury, stating that £400 had been placed on the estimates as a subsidy to the Board.

NEW ZEALAND CHEMISTS appear to have worried themselves unnecessarily in connection with the recently introduced Medical Practitioners Bill. In reply to a deputation recently, Sir Joseph Ward stated emphatically that the Bill had nothing to do—good, bad, or indifferently—with chemists, and that it was never intended by those who framed the Bill that it should. The hon. gentleman having been asked if the Bill would not prevent a chemist from prescribing behind his counter for various minor complaints in the way of every-day business, replied, "Certainly not." The Bill was intended for the protection of registered medical practitioners against charlatans and others who were deceiving and gulling the people continually throughout the Colony by calling themselves medico-herbalists, medico-electricians, medical specialists, and such designations. If a chemist remained behind his counter, and did not go out calling on patients and leading them to suppose that he had some medical knowledge, there was nothing contained in the Bill to interfere with him. Sir Joseph added that if the deputation had any doubts now about the wording of the Bill as affecting the chemists of the Colony, he would have it referred back to the Crown law offices, and in the event that it does, he would have it altered, so that the rights of persons carrying on the legitimate business of chemists and druggists would not be interfered with. However, as he did not intend going on with the Bill this session, there would be ample time during the recess to look carefully into the provisions of the Bill.

RECENT PATENTS.[*]

PHOTO-MECHANICAL PROCESSES.

By a new method of producing printing surfaces an impression from a printing-block is made on celluloid, gelatin, or other translucent material. A copy of this impression is printed by light on a layer of asphalt, chrome-gelatin, or the like, on a metal or stone support, which is now etched with ferric chloride or the like. From the deeply impressed plate thus obtained casts in celluloid, gutta percha, or the like are taken, and these may be used as printing surfaces, or for the Woodbury type process. Instead of copying the positive directly on metal or stone it may be copied on transfer or pigment paper and the copy transferred in the usual way to metal or stone, and subsequently developed. (E. Vogel, 240, Friedrichstrasse, Berlin; No. 8,088 of 1900.) Another method has recently been patented for obtaining a printing surface on a lithographic stone or the like from a photograph. If the object to be printed in monochrome is a wash drawing, etching, or other picture a photographic reversed negative is obtained from it in the usual way, preferably through a suitable screen. A positive is printed from this on glass. Next a glass is coated with stripping collodion (collodion and castor oil) stained with a nonactinic dye, over which is coated a layer of bichromated gelatin. This film is exposed under the positive above mentioned, and the negative so obtained is developed with water. It may then be treated with dye to render it more visible. A piece of transparent paper is squeegeed on the surface, and the negative film with the collodion film is stripped from the glass. A second sheet of transparent paper is squeegeed on the collodion film, the first piece of paper being removed. The film is then squeegeed on the lithographic stone, the second sheet of paper is stripped off, and the collodion is removed by a solvent. Transfer ink is then applied and penetrates through the interstices of the negative to the stone, a positive printing surface being thus produced. The above method may be applied to the three-colour process; some modifications in details are described. (J. Paterson and others, 17, St. Giles Street, Edinburgh; No. 8,578 of 1900.)

SOLDERING ALUMINIUM.

Aluminium may be soldered to aluminium or other metals by first tinning and then using ordinary solder and a copper bit. A suitable flux for tinning contains stearic acid 5 parts, resin 2 parts, and oleic acid 1 part, or stearic acid 3 parts and 1 of resin. For soldering it is preferable to take 10 of oleic acid and 1 of stearic acid, but either of the fluxes may be used for both operations. (J. Novel, 15, Rue des Grottes, Geneva, Switzerland; No. 8,518 of 1900.)

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[*] **Abstracted from the *Illustrated Official Journal* (*Patents*) and from specifications furnished by the Patent Office. A copy of any original specification can be obtained from the Comptroller-General, Patent Office, 25, Southampton Buildings, Chancery Lane, W.C., by sending 8d. in stamps, or a Patents Form, C1 (which can be obtained at the principal Post Offices at the same price), and stating the number and year of the required specification.**

A Neutral Soap Containing Albumen.

This is a patent for the production of a neutral toilet soap containing albumen. Suitable proportions of fat—*e.g.*, cocoa-butter—and soda lye are mixed with formaldehyde solution, a quantity of the filtered contents of hen's eggs is then added and the whole thoroughly stirred. When the first stage of saponification is reached the liquid mass is poured into canvas-lined boxes and is left until completely saponified, when it is ready for cutting, etc. (W. Schuh, 18, Albrecht Dürerplatz, Nuremberg, Germany; No. 8,582 of 1900.)

Glossing Composition for Linen.

A paste to be applied to linen before ironing is made of French chalk, white soap, paraffin wax, white wax, isinglass, and water, with the addition, when desirable, of oil of citron or other perfume. (S. Coates, 48, South Mount Street, Beeston Hill, Leeds, Yorkshire; No. 9,410 of 1900.)

Solidifying Oils.

A solidified mineral oil product, which is non-explosive, and does not melt when ignited, is prepared by agitating petroleum ether with an aqueous solution of a caseinate, glycerin and soap. The product is readily emulsified with cold water, and may be used for washing or cleansing purposes. (J. R. Hatmaker, 4, Down Street, London, W.; No. 8,141 of 1900.)

Manufacture of Benzoic Acid and Phthalic Acid.

It is known that naphthalene and the naphthols may be oxidised by permanganate in the presence of alkali to phthalonic acid and partly to phthalic acid. This method, however, is expensive, owing to the use of permanganate, and necessitates further oxidation of the phthalonic acid to phthalic acid. The patentees have discovered that the naphthols can also be oxidised in the presence of alkali by agents other than permanganate, even to phthalic acid. By heating naphthols with alkali and metallic oxides or peroxides which have an oxidising action, such as copper oxide, iron oxide, barium, lead, and manganese peroxides, at a temperature of over 200° C., phthalic and benzoic acid are obtained together with a few intermediate products. Ortho-cinnamyl-carboxylic acid appears to be the first oxidation product; this can be oxidised to phthalic acid, from which benzoic acid can be produced by splitting off carbonic acid. Not only the naphthols can be made to yield these products, but also the substituted naphthols, such as nitroso-naphthols, nitro-naphthols, naphthol-sulphonic acids and the like, also other substitution products of naphthalene such as nitro-naphthalene, naphthylamines, and naphthalene-sulphonic acids. (The Basle Chemical Works, Basle, Switzerland; through Abel and Imray, Birkbeck Bank Chambers, Southampton Buildings, London; No. 15,527 of 1901.)

Manufacture of Photo-Mechanical Printing Plates.

The photo-mechanical methods used hitherto, except the autotype and line-etching process, cannot be used in connection with printing presses; the processes named do not give a flat surface and pure half tones. The present invention has two characteristic features: (1) No preliminary photographic process is necessary for the manufacture of the plates; any glass or film negative will serve; (2) the plate itself presents a positive, *i.e.*, the parts exposed to light remain recessed whilst those not exposed swell and form the suface, on which fact the printing process is based. In manufacturing the plates, a metal plate, preferably of copper, and of the size of the desired picture, is heated to 35 to 40° C., and coated with an emulsion consisting of water at 70° C., 100 Cgm.; gelatin in leaves or flakes, 20 Cgm.; a bichromate (preferably potassium or ammonium bichromate, or a mixture of the two) 6 Cgm.; alcohol, 30 Cgm.; acetic or other acid, 2 drops. The coated plate is dried in the dark for about two hours at about 45° C., cooled, placed with the negative in a copying frame, and exposed as for a silver print. A negative picture is obtained which becomes positive on immersion in water. This positive is then dried in the air and, when required for use, soaked, for ten minutes in equal parts of water and glycerin, and wiped. By this method the half-tones can be reproduced as only the strongest lights remain depressed, thus producing the pure whites, while all other parts exposed swell more or less in a uniform manner. (L. J. Bisson, 58, Rue Rochchouart, Paris, France, through Boult, Wade, and Kilburn; No. 7,300 of 1901.)

Sterilising Apparatus.

A sterilising or disinfecting apparatus, for medical and other uses, consists of a series of two, three, four, or more cases, glass or otherwise, and independent of one another. Each case is provided with a door, and in each case is inserted an openwork basket. The cases or stoves are in communication with a single gas reservoir by means of spiral valves adapted to be opened by the insertion of the basket containing the articles to be sterilised, and are closed by the withdrawal of the basket. Each stove is provided with a basin, which may contain dehydrating substances, such as quicklime or calcium chloride, or disinfecting substances adapted to assist the disinfecting power of the gas employed. The gas generally used in the apparatus is formic aldehyde. The apparatus is well adapted to the disinfection of surgical instruments. (J. Pirnay, Rue Jean d'Outremeuse, Liège, Belgium, through Wm. P. Thompson and Co., 6, Lord Street, Liverpool; No. 16,199 of 1901.)

An Improved Impervious Cork.

In order to obviate the introduction of cork dust into a bottle, ordinary corks are coated with one or more layers of a preparation of collodion containing about thirty-two drops of chemically pure petroleum oil per litre. The petroleum renders the coating elastic, and has an advantage over castor oil in being tasteless. After applying the final layer of this composition the cork is allowed to dry in the air, when it is fit for use. Experience has proved to the inventor that the layer obtained in this way resists perfectly all the pressure and alteration of shape to which it is subjected in the course of bottling by machines. (G. A. Trombert, 7, Place de l'Abondance, Lyon, France, through S. S. Bromhead, 33, Cannon Street, London, E.C.; No. 11,330 of 1901.)

Monoborates as Antiseptics or Detergents.

The substances now patented as antiseptics or detergents are the monoborates of potassium and sodium, with or without ammonium. There are numerous ways of making these crystalline compounds:—(1) Direct from boric acid by neutralising the acid with caustic potash or soda and adding a little caustic ammonia before crystallising the salt; (2) a cheaper method consists in boiling crude calcium borate, commonly known as borocalcite, with a caustic alkali; (3) the quickest method consists in dissolving caustic potash in hot water, neutralising with borax, and crystallising. For immediate use the presence of ammonia is not necessary, but if the product is to be kept then the ammonia prevents the action of the carbon dioxide of the atmosphere. These compounds are recommended in place of Condy's fluid and carbolic acid, as they have a strongly antiseptic action, and are, to a certain extent, deodorisers. It is an advantage to nicely balance the proportions of potash, soda, and ammonia, as the first-named makes the product more soluble, the second prevents it from being deliquescent, which would be the case with potash alone, while the ammonia prevents the monoborate of potassium and sodium from absorbing atmospheric carbon dioxide. (C. Billing, 15, Wenham Street, Liverpool; No. 10,549 of 1901.)

PRACTICAL NOTES AND FORMULÆ.

Sterilisation of Liquids.

The sterilisation of liquids for subcutaneous injection is best effected, according to H. P. Hynson, by placing the cork very tightly in the bottle, and covering it with a considerable quantity of absorbent wool tied over with gauze. The bottle is then kept in boiling water, or an active steriliser for thirty minutes or longer. The heating should be repeated on the following day, if time allows, when the cork is tightly pushed in place without removing the cotton or gauze.—*Canadian Druggist.*

Notes on Solubilities.

H. P. Hynson states that chloretone will not dissolve in petroleum oil, but when dissolved in a fixed oil, will mix with liquid petroleum in fair proportions. Carbolic acid added to Goulard's extract causes a heavy precipitate; this can be prevented by dissolving the carbolic acid in a little glycerin. Eucaine B dissolves in solution of adrenalin hydrochloride without objectionable pharmaceutical behaviour. Adrenalin hydrochloride does not dissolve in petroleum alone, or by the aid of chloroform, heat, or oleic acid. The same remark applies to morphine and its salts.—*Canadian Druggist.*

A Novel Show Bottle.

A fluorescent show bottle may be made by using the following formula:—

Fluoresceine	10 grs.
Alcohol	1 oz.
Water	2 gals.

Dissolve the fluoresceine in the alcohol, and add to the water. A little dilute soda solution increases the fluorescence. 20 to 30 drops of formalin should be poured on the surface of the liquid to prevent decomposition. A show bottle filled with this solution has the appearance of a huge opal when viewed by reflected light.—*Druggists' Circular.*

Ink for Writing on Photographs.

The following formula is said to answer well:—

Potassium iodide	10 parts.
Water	30 parts.
Iodine	1 part.
Gum Arabic	1 part.

Dissolve the iodide in the water and then add the iodine, and dissolve. Finally dissolve the gum by agitation. The writing is due to conversion of silver salts into iodide, and the consequent bleaching of the paper.—*National Dru gist.*

Gelatin and Orthoform.

H. P. Hynson has attempted to make gelatin lozenges containing orthoform, but found that the latter substance entirely overcomes the gelatinising power of the gelatin. Tragacanth and sugar base had to be substituted.—*Canadian Druggist.*

Hectograph Ink and Basis.

Ink.—A mixture of water, 200, and (methylated) spirit, 30, is saturated with the required aniline dye (30 or more) by allowing to stand in a warm place for a few days. The solution is then weighed, the spirit is evaporated off and the residue made up to the original weight by the addition of water, 0·4 per cent. of phenol is added and the whole filtered. *Hectograph Basis.* —(1) Glue, 250; water, 250 to 300; glycerin, 1,000. (2) Glue, 300; water, 500; glycerin, 1,100. (3) Glue, 140; water, 560; glycerin, 800; evaporate on the water-bath to 1,100. (4) Sugar, 75; gelatin, 450; water, 680; glycerin, 1,425. (5) Gelatin, 125; water, 335; glycerin, 590. (6) Gelatin, 100; water, 220; glycerin, 520. (7) Gelatin, 730; glue, 700; water, 1,700; glycerin, 5,430. Evaporate to 8,000 on the water-bath. These masses may be kept ready for use in wide mouth, well bunged jars.—*Pharm. Centralh.*, **42**, 510.

THE STUDENTS' COLUMNS.

Waxes Used in Pharmacy.

The term "wax" is commonly applied to any substance resembling beeswax in appearance, consistency, or other physical characteristics, or which may be used for like purposes. But the application of the term is more correctly restricted to beeswax, spermaceti, and other substances which are composed chiefly of fatty acid esters of monohydric alcohols, mostly of high molecular weight and homologous with methyl alcohol. True waxes differ from fixed oils and fats, some of which are commonly termed waxes, in not yielding glycerin when treated with alkalies. Paraffin wax, so called, is a mixture of hydrocarbons, and not a true wax. The specific gravity, melting and solidifying points, and solubility in various liquids are the points of chief importance to be noted in connection with waxes, and students are recommended to verify the statements made with regard to those points. There are several wax-like substances used in pharmacy, of which five—yellow beeswax, white beeswax, hard paraffin, spermaceti, and wool-fat—are official in the British Pharmacopœia. Other substances of a waxy nature in more or less common use are carnaüba wax, Chinese or insect wax, Japan wax, and myrtle wax.

Beeswax.

Beeswax may be regarded as the most important kind of wax from a pharmaceutical point of view. It is secreted by the hive bee, *Apis mellifica*, Linné (Order Hymenoptera), the necessary material being provided by the plants which that insect frequents in search of food. Wax exists in the pollen of numerous plants and also forms the bloom which covers certain fruits and the varnish on certain leaves. It is noteworthy that pollen is commonly present in beeswax. As obtained from the honeycombs constructed by the bee the wax, as a rule, is of a yellowish colour, but greenish, reddish, and brownish varieties of beeswax are sometimes imported from non-European countries. It usually possesses an agreeable honey-like odour. If pure, it breaks with a granular fracture and is not unctuous to the touch. It is lighter than water, its specific gravity varying from 0·960 to 0·970, and it melts between 62·5° and 64° C., the melted wax solidifying at a point from two to three degrees lower than the melting point. Pure beeswax should dissolve readily and entirely in hot oil of turpentine, and is also dissolved with facility by hot ether, but a portion of it separates from the ethereal solution on cooling. Not more than 3 per cent. of beeswax is dissolved by cold alcohol, but it is more soluble in boiling alcohol, the portion dissolved in the latter case consisting of the bulk of the cerotic acid present, with a small quantity of myricin. Beeswax contains about 15 per cent. of cerotic acid and more than 80 per cent. of myricin, together with small quantities of melissic acid, cerolein, and other bodies, including colouring matter and traces of hydrocarbons. Cerotic acid in an impure state has been named cerin; the acid ($C_{26}H_{53}COOH$) is a homologue of acetic acid (CH_3COOH). Myricin (myricyl palmitate) is the palmitic ester of myricyl alcohol ($C_{30}H_{61}OH$), a homologue of ethyl alcohol (C_2H_5OH). Cerolein is an aromatic body which probably consists of a mixture of fatty acids. The sole use of beeswax in modern medicine is as an ingredient of ointments, cerates (Latin *cera*, wax), plasters, suppositories, surgical dressings, etc. Its action is purely mechanical, the wax imparting stiffness or affording protection from water as the case may be.

White Beeswax.

White Beeswax is prepared from the yellow variety by exposing thin bands of the latter to the action of air, sunlight, and moisture, for several weeks, re-melting it and repeating bleaching process if necessary. The colouring matter of the crude beeswax may also be destroyed by the action of powerful oxidising agents, such as chromic or nitric acid. Artificially bleached wax, however, is not suitable for pharmaceutical purposes, and is excluded by the official description. Possible adulterants of white beeswax are lard, tallow, hard paraffin, starch, or mineral substances such as kaolin. The pure wax should respond to the same tests as yellow beeswax, and any serious difference in the specific gravity or melting point may be assumed to indicate the presence of foreign matter. White wax occurring in circular cakes is usually a mixture. The use of white beeswax in pharmacy is restricted to cases in which the colour of the yellow variety would be undesirable.

Paraffin.

PARAFFIN WAX, so-called, is a mixture of the harder members of the paraffin series of hydrocarbons. It is obtained chiefly from the crude tarry oil resulting when shale is submitted to destructive distillation. After treatment with sulphuric acid and caustic soda successively, the oil is again distilled and the wax is deposited from the thick oil left after the more volatile constituents have passed over. It is dark coloured at first, but can be obtained in a colourless condition by filtering it, when melted, through animal charcoal. The specific gravity of the colourless, semi-transparent substance is from 0·82 to 0·94, and the purified wax melts between 54·5° and 57° C. Paraffin differs from beeswax in being unaffected by strong sulphuric acid. It is only slightly soluble in absolute alcohol, but almost entirely, though not freely, soluble in ether. The wax is used in medicine for stiffening ointments which are not required to be absorbed too rapidly, but it is much more largely employed in the manufacture of candles and for coating paper to make it waterproof. Cerasin (s.g. 0·918 to 0·922 and m.p. 61° to 78°) is purified ozokerit, a natural bituminous product consisting chiefly of paraffin wax, found in Galicia and elsewhere on the Continent of Europe.

Spermaceti.

SPERMACETI is a waxy substance which separates in crystalline form from sperm oil. The oil occurs in cavities in the head and body of the sperm whale, *Physeter macrocephalus*, Linné (Order Cetacea), and the spermaceti is deposited therefrom on keeping. When freed from all traces of oil, it occurs in crystalline, pearly-white, glistening masses, which are slightly unctuous to the touch and have but little taste or odour. Its specific gravity varies from 0·905 to 0·960 and its melting point from 46° to 50° C. It is soluble in ether, chloroform, boiling alcohol, and in fixed and volatile oils of various kinds, but is nearly insoluble in cold alcohol. Spermaceti consists almost entirely of cetyl palmitate (cetin), the palmitic ester of cetyl alcohol, together with small quantities of closely allied homologous esters. Unlike different fats used in pharmacy, it contains no glycerides and, therefore, yields no glycerin on saponification by potassium hydroxide or other alkali. It possesses no remedial properties, and is chiefly used for stiffening ointments. It can be powdered after sprinkling it with a little strong alcohol, and may then be emulsified by mixing it with half its weight of olive oil and subsequently adding powdered acacia and water.

Wool-Fat.

WOOL-FAT is the wax obtained from the wool of the sheep, *Ovis aries*, Linné (Order Ungulata), by kneading it with water. The purified anhydrous wax contains cholesterin, iso-cholesterin, and other fatty alcohols, together with esters—the stearates and palmitates—of those alcohols, and is capable of incorporating more than 25 per cent. more than its own weight of water. It is a yellowish, tenacious, unctuous substance, with a slight but peculiar odour. Its specific gravity is about 0·97 and its melting point varies from 40° to 44·5° C. It dissolves readily in ether or chloroform, but less readily in alcohol. Wool-fat passes through the skin much more readily than ordinary fats, and when hydrated it makes an excellent ointment basis, especially if mixed with an equal weight of soft paraffin.

Carnaüba Wax.

CARNAÜBA (or BRAZIL) WAX is an exudation from the leaves of *Corypha cerifera*, Arruda (N.O. Palmaceæ), a native of Ceara, Brazil, and other parts of tropical South America. It is dirty green or yellowish in the crude state and very brittle, being thus easily reduced to powder. Its specific gravity is about 0·99, and the purified wax, which occurs as a crystalline mass, melts at 105° C. The chief constituent of the wax is myricyl cerotate, with which are associated small quantities of carnaübic acid, cerotic acid, myricyl alcohol, and other bodies. The wax is chiefly employed in the manufacture of candles and wax varnishes.

Chinese Wax.

CHINESE (PELA or INSECT) WAX is the secretion deposited by *Coccus cerifera*, Fabricius (Order Hemiptera), or *C. pela*, Westwood, on the twigs of the Chinese ash, *Fraxinus chinensis*, Roxburgh (N.O. Oleaceæ). It is of a yellowish-white colour, lustrous and crystalline, without odour or taste. Its specific gravity is from 0·926 to 0·970 and its melting point from 80·5° to 83° C. It is very soluble in benzene, but only slightly soluble in alcohol or ether. It consists chiefly of ceryl cerotate and is chiefly used in China and Japan, the countries where it is produced, for making candles, polishing furniture and leather, or for sizing paper and cotton goods.

Japan Wax.

JAPAN WAX is a true fat rather than a wax, as it yields glycerin on saponification. It is prepared in Japan and China from the berries of sumach trees, including *Rhus succedanea*, Linné (N.O. Anacardiaceæ), *R. acuminata*, *R. venicifera*, and *R. sylvestris*. It is imported in small pale yellow slabs, which break with a conchoidal, somewhat lustrous fracture, and have an odour recalling that of a mixture of tallow and beeswax. It is hard, but possesses a wax-like consistency and can be kneaded between the fingers. On keeping it becomes darker coloured and exhibits a crystalline structure. Its specific gravity is from 0·963 to 0·980 and its melting point from 50·5° to 56° C. It is soluble in ether, benzene, and petroleum ether, also dissolving readily in hot alcohol, but it separates out from the alcoholic solution almost completely on cooling, in the form of a granular, crystalline mass. The chief constituents of Japan wax are palmitin and free palmitic acid, together with small quantities of stearin, arachin, and soluble fatty acids. It is sometimes used as a substitute for beeswax, but is distinguished from the latter by saponifying when boiled with alkalies.

Myrtle Wax.

MYRTLE WAX is not a true wax, but a vegetable fat obtained by boiling with water the berries of *Myrica cerifera*, Linné (N.O. Myricaceæ), and other species of *Myrica*, indigenous to the United States. It has a greyish-green colour, due to the presence of chlorophyll, but tends to become whitish on exposure to the air. It is only partially soluble in boiling alcohol, more soluble in boiling ether, and slightly soluble in oil of turpentine. Its specific gravity is about 0·95 and its melting point from 40° to 44° C. The chief constituents of the fat are the glycerides of stearic, palmitic, and myristic acids, with a small quantity of oleic acid. It has also been stated to contain lauric acid. Myrtle wax is readily saponifiable with alkalies and may yield more than 13 per cent. of glycerin. It has been employed as a remedy for dysentery, and is sometimes used as a substitute for beeswax in making plasters, but is much more largely employed in the manufacture of tapers and candles.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

PEPPERMINT ODOUR IN EUCALYPTUS OIL.

H. G. Smith has communicated a paper to the Royal Society of New South Wales, in which he deals with the constituent of peppermint odour occurring in many eucalyptus oils. He points out that the first eucalyptus oil obtained was distilled by Dr. White in 1788, at Sydney, and, owing to the great resemblance between the oil and that obtained from the peppermint *Mentha piperita*, he named the tree *Eucalyptus piperita*, from which he had obtained the oil, the "Pepperment Tree." Since then many other species of *Eucalyptus* have been found to possess the peppermint odour, and are generally known as "peppermints." The constituent to which the odour is due has now been isolated. It occurs in greatest amount in the oil obtained from the leaves of *E. dives*, next in that of *E. radiata*, and in fair amount in the oils of several other species. It is usually found in those eucalyptus oils in which the principal terpene is phellandrene (see *P.J.* [4], **13**, 34), although this is not always so, but generally there is an almost entire absence of eucalyptol in those oils in which it occurs most abundantly. The crude oil of *E. dives* was taken for the preparation of this peppermint consituent. This constituent is not menthone, and is probably a new ketone; a molecular determination gave 155, so that probably its formula may eventually be found to be $C_{10}H_{18}O$.—*Nature*, **65**, 192.

COMPOUND TINCTURE OF BENZOIN.

Hill and Liverseege have determined the amount of "extract" yielded by the constituents of the official compound tincture of benzoin, and from their results suggest the adoption of a standard of 180 grammes of dry extract per litre. In the preparation of the tincture of benzoin 100 parts of official benzoin should yield soluble matter equivalent to at least 85 parts of dry extract, allowing a loss of 15 per cent. of insoluble and volatile matter. Probably 80 per cent. of the storax will appear as dry extract when used for tincture. An allowance of 10 per cent. is considered sufficient for the balsam of tolu. The sample of socotrine aloes examined by the authors yielded 97 per cent. of dry extract when treated as in making the tincture. An allowance of 10 per cent. for insoluble and volatile matter is therefore ample. The suggested standard has been arrived at by calculation from the above figures, thus:—

Quantities given by the Pharmacopœia.		Amount of Extract in	
		Drug.	Tincture.
	Grammes.	Per Cent.	Grammes.
Benzoin	100	85	85·0
Prepared Storax	75·0	80	60·0
Balsam of Tolu	25·0	90	22·5
Socotrine Aloes	18·3	90	16·5
Per litre	218·3		184·0

A sample of tincture prepared by the authors, without special care as to quality of drugs, yielded 182 grammes per litre. Sp. g. 0·896 at 60° C. (*sic*). Out of 25 samples purchased officially by the Birmingham Food and Drugs Inspector during the last two years, 13 yielded between 180 and 187 grammes of dry extract per litre; 1 sample gave 158 grammes and was passed as of low quality; whilst 2 samples below this caused the vendors to be heavily fined. They conclude that 160 grammes may be taken as the minimum limit for tincture of benzoin.—*Analyst*, **26**, 283.

EXPERIMENTS ON CONDUCTIVITY.

M. Centnerszwer deals with the conductivity of liquid cyanogen and of anhydrous hydrocyanic acid, and of solutions of salts. In the case of cyanogen, the results of Gore, obtained in 1872, are extended and confirmed. Pure liquid cyanogen was found to have a scarcely measurable conductivity, its solvent power is very slight, and in no case could a proof of dissociation into ions be proved from the conductivity measurements. Liquid hydrocyanic acid proved to have a measurable conductivity, which varied, however, in different experiments. Conductivity measurements were successfully carried out with solutions of potassium iodide and trimethylsulphine iodide, with the result that the solutions were found to possess about four times the conductivity of aqueous solutions of the same salts at equal temperatures and concentrations.—*Zeitschrift für Physikalische Chemie*, through *Nature*, **65**, 181.

INFLUENCE OF SALTS ON VAPOUR PRESSURE.

E. P. Perman has investigated the effect produced by urea, mannite, potassium sulphate, ammonium chloride, and copper sulphate respectively on the vapour pressure of aqueous ammonia solution by a method similar to that already described for sodium sulphate (*Trans. Chem. Soc.*, 1901, **79**, 725), the objects of the research being to find (1) the effect upon the pressure of substances which have no direct chemical action on the ammonia, (2) the effect of rise of temperature on copper sulphate ammonia solution, (3) evidence for or against the existence of hydrates in solution. The conclusions arrived at by the author are: (1) that salts of the alkalies have a great effect in raising the pressure, but that the effect of other substances which might be expected to have no direct chemical action on the ammonia is either small or nothing; (2) that copper sulphate forms complexes with ammonia in solution which tend to decompose on heating, especially when the proportion of copper sulphate is small; (3) that the effect of potassium sulphate is similar to that of sodium sulphate in raising the pressure. There is but little reason to suspect the existence of a hydrate of potassium sulphate, as it crystallises without water; consequently it would appear that neither sulphate exists in solution as a hydrate.—*Proc. Chem. Soc.*, **17**, 261.

PHŒNIN AND PHŒNICEIN.

Estella Kleerekoper has isolated two new colouring matters, phœnin and phœnicein, from the purple wood of *Copaifera bracteata*. The tree belongs to the Cæsalpinæ, which includes the species yielding hæmatoxyllin and brasillin. The powdered wood is extracted with alcohol, and the residue, after distilling off the solvent, treated with acetic ether; the residue from this, crystallised from water, after treatment with animal charcoal, yields phœnin in deep violet crystals, which have the formula $C_{14}H_{16}O_7$, which are soluble in alcohol and ether, but not in chloroform, benzin, or benzol. By treatment with dilute acids, phœnin is converted into phœnicein. Alkalies give a blue colour with phœnin.—*Neder. Tijdsch. voor Pharm.*, through *Pharm. Central.*, **42**, 675.

BERGAPTIN.

H. von Soden and W. Rojahn have isolated what they consider to be a new crystalline body from the distillation residues of bergamot oil, which they name bergaptin. It appears to be closely allied to the bergaptene of Pomeranz. It crystallises from petroleum ether in white tablets, and from ether in yellow cubes. It contains no phenolic nor methoxyl groups; it is saponified by alkali, and regenerated when the saponification product is treated with acid.—*Pharm. Zeit.*, **46**, 778.

INTERACTION BETWEEN MAGNESIUM SULPHATE, PHENAZONE, AND SODIUM SALICYLATE.

BY J. P. GILMOUR.

I had occasion recently to dispense the following mixture:—

℞	Phenazoni	ʒi.
	Sodii salicylatis	ʒiii.
	Potass. bromid	ʒiv.
	Magnesii sulphatis	℥i.
	Glycerini	℥ss.
	Aquæ ad	℥viii.

When the bottle was returned to be refilled it contained a copious deposit of cluster, white prismatic crystals, accumulated on the bottom, and adhering firmly to the sides. As on theoretical grounds, there was no reason to expect the formation of an insoluble compound in such a mixture, it became necessary to get at the cause of the interaction by a process of elimination. Accordingly, the following solutions were prepared and set aside for twenty-four hours at a temperature, as recorded by a maximum and minimum thermometer, ranging from 60° to 51°.

(1) Sodii salicylas + phenazone	No apparent change.
(2) Potass. bromid. + phenazone	No apparent change.
(3) Potass. bromid. + phenazone + sodii salicylas.	No apparent change.
(4) Magnesii sulph. + phenazone	No apparent change.
(5) Magnesii sulph. + sodii salicylas.	No apparent change.
(6) Magnesii sulph. + sodii salicylas + potass. brom. + phenazone.	Crystalline deposit.
(7) Magnesii sulph. + phenazone + sodii salicylas.	Crystalline deposit.

Experiment No. 7 was repeated in various forms. With a concentrated solution there was an immediate formation of minute detached crystals, which multiplied so abundantly that the contents of the vessel soon became semi-solid. In solutions of the strength of the original prescription, the reaction did not become visible for some hours, when tiny crystalline foci could be detected on the sides of the glass.

The next point was to ascertain roughly the composition of the crystalline deposit. For this purpose it was removed from the bottle, drained on filter paper, and washed with water, until the washings ceased to show any trace of sulphate. The crystals were then dried slowly at a temperature under 100° C., and subjected to the undernoted physical and chemical tests. Under the microscope the crystals were seen to have the form of hexagonal prisms, mostly arranged radially in clusters. They were neutral to litmus, soluble sparingly in cold, but more freely in boiling water, and practically insoluble in alcohol, 64 o.p., ether, and chloroform. They were sweetish and somewhat gritty to the taste. A portion of the dried substance ignited on platinum foil evolved the characteristic odour of phenol, and the calcined white residue on examination proved to be mainly magnesium. Another portion was heated gently in a mixture of equal parts of dilute nitric acid B.P. and water until dissolved. On cooling, silky crystals separated out, which were collected on a filter paper and identified as salicylic acid. The filtrate was treated with a sufficiency of sodium hydroxide to neutralise the salicylic acid, etc., carried through in solution, and an excess of $AgNO_3$ was added to precipitate the sodium salicylate, etc., as insoluble salicylates. The excess of $AgNO_3$ was then removed with NaCl, and the solution tested for magnesium and phenazone, both of which were found to be present. The tests used to detect the phenazone were $FeCl_3 + H_2SO_4$ and $NaNO_2 + H_2SO_4$. The reaction in both cases was quite diagnostic. The same course of treatment was applied to the crystals obtained from solutions No. 6 and 7, and more concentrated solutions of the same composition, but always with identical results.

I shall be glad to learn if any reader of the *P.J.* with wider knowledge and experience is aware of the existence of a body in which phenazone, magnesium, and salicylic acid are chemically combined. And I shall be deeply obliged if someone will repeat and revise my rough observations and experiments.

PHOTOGRAPHIC NOTES.

BY A PHARMACEUTICAL CHEMIST.

COLLODIO-BROMIDE EMULSION.—The first of the three notes on this subject, published in the *P.J.* of January 4, should have followed the other two and, as a matter of fact, was not intended to appear at the same time. That fact should be sufficiently obvious to readers,* but this explanation is given in order to prevent any misunderstanding.

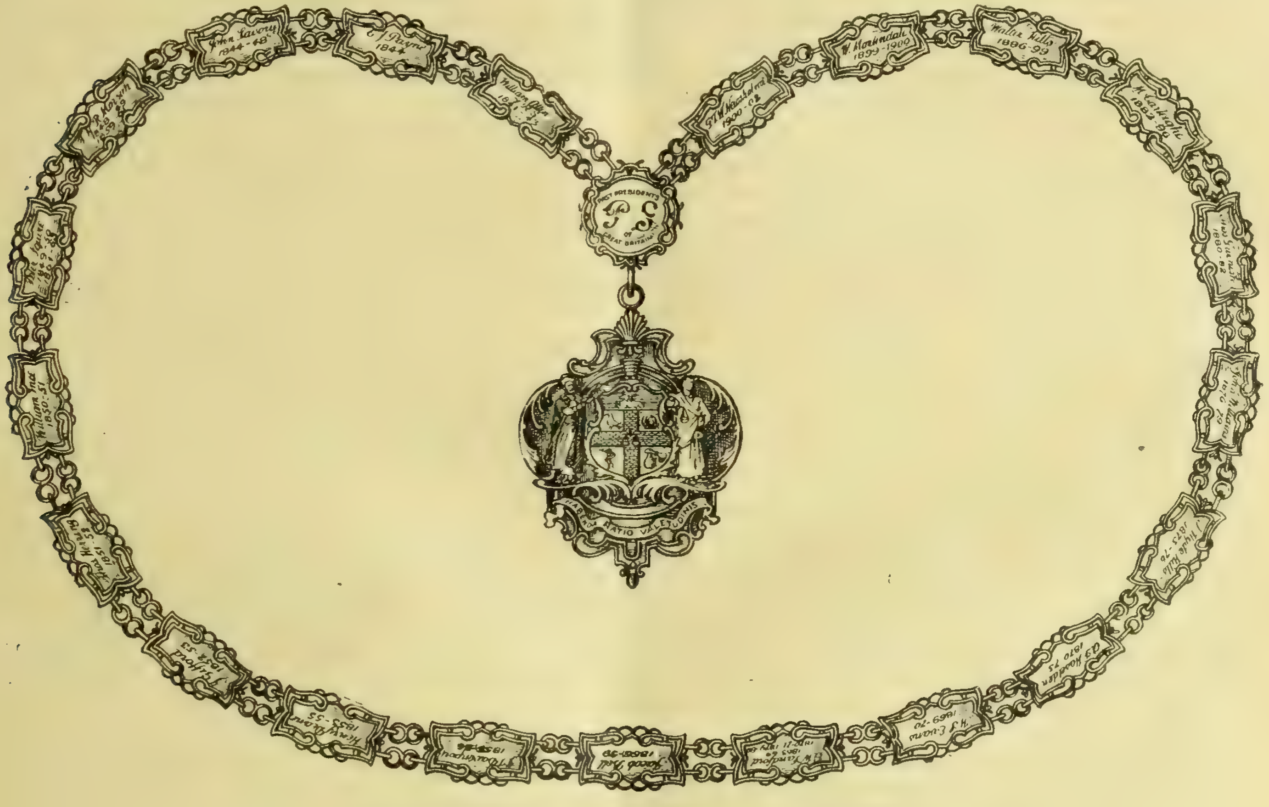
PHOTOGRAPHIC NOMENCLATURE.—My remarks on this subject have induced a reader of the *P.J.*, who signs himself "Cave Canem," to write a letter in which he endeavours—in an unnecessarily vigorous manner—to instruct me regarding the mysteries of trade mark registration. I think, however, that my harmless little paragraph will be understood and appreciated by a large number of persons who practise photography as something more than a mere frivolous pastime, though they do not appear to be very intelligible to "Cave Canem," because, I think, he regards the matter entirely from one side, viz., from the trade point of view. I hope that one may be permitted sometimes to get away from purely trade considerations.

IN COMMON WITH MOST PHOTOGRAPHERS I have great admiration for the conspicuous energy and ability displayed by the Kodak Company in the building up of their colossal business, which has made the word "Kodak" a household word, though the use of the word is pushed too far when with many unthinking people to photograph is called "to Kodak," and every form of photographic camera is described as a "Kodak." This has been the forerunner of a large and increasing number of more or less absurd and unmeaning coined words similarly applied, which may or may not be necessary from a business point of view; but I think many will agree with me that the multiplication of them is certainly to be regretted on other grounds. To give an instance, a popular form of camera is sold on the Continent under the name of the "Piff-Paff"; may we assume that amongst those to whom this name becomes familiar a photographer will be known as a "Piff-Paffer"? I hope not, and I do not think we have yet any so silly a name in this country, though we seem to be approaching it.

AS A PHARMACIST I am one of those who do not consider that the true interests of pharmacy are bound up in the sale of proprietary medicines or quack nostrums; and, consequently, have not had the experience of inventing or registering any word to describe such. I can, as I remarked, understand the use of a coined word in connection with such preparations, many of which consist simply of well-known constituents, the object of such word being to create an impression upon the buyer that he is using some extraordinary compound or new discovery in medicine. This practice of presuming upon the credulity of the public does not commend itself to me; but surely such considerations do not apply in the case of a photographic instrument, whose inherent qualities and fitness for its intended purpose are evident to the senses. If it be considered necessary for business purposes to apply a distinctive name, is it unreasonable to expect that the word used should be in some way descriptive or appropriate, and not absolutely meaningless?

THE PRESIDENTIAL CHAIN.

Shortly after ten o'clock on Wednesday morning, January 8, several members of the Pharmaceutical Society assembled in the Council room at 17, Bloomsbury Square, London, in response to a communication from the Secretary that the Chain commemorative of the Society's past-Presidents, which has been provided chiefly by their representatives in accordance with the suggestion of Mr. E. N. Butt (see *P.J.* [4],**13**, 412), would be handed over to the President of the Society at a meeting to be held before the commencement of the Council proceedings.



THE PRESIDENTIAL CHAIN AND BADGE.

The President having taken the chair, Mr. E. N. Butt said those present had met that morning to take part in the ceremony of investing the President with the Chain of honour. It would be within the recollection of most that when Mr. Carteighe invested the President with the Badge, he (Mr. Butt) suggested that a chain, each link of which should be subscribed for by the past-Presidents or their representatives, would make a more fitting support for the Badge than the blue ribbon by which it was then supported. At that time he thought it was possible that in the course of a year they would be able to invest the President with the Chain, but he was pleased to say he was in a position to present it that morning. He might say that in less than a fortnight everything was provided, and in three weeks the Chain was in hand, and he thought when it was examined all would agree that the work had been very well done.

Mr. Butt then invested the President with the Chain, and proceeded to read the inscriptions which appear on the links (see page 24).

Mr. Butt, continuing, said the Chain, as well as the Badge, had been designed and executed by Messrs. Watherston and Son, of Pall Mall East. Turning to the President, Mr. Butt said: Mr. President, you have worn that Chain sufficiently long to find that it adds weight to the office you hold, and I hope it will also add dignity to the Pharmaceutical Society. Whenever that Chain is worn in public, I hope it will prove that the Pharmaceutical Society is not a nonentity, but that it is a Society which has done work of the very best kind, and I hope that whoever your successors may be they will remember that the Society exists for the protection of the public, and that whatever legislation is attempted the safety of the public will be the primary object. That object must be attained by education, examination, registration, and by a power which has been invested in the Society which is almost unique—viz., the power of prosecution. The Society has hitherto always put the safety of the public first, and I trust it will continue to do so. Mr. President, I hope that you will maintain the dignity of the

Society. You have done so in the past, and I do hope you will do so in the future.

The President, on behalf of the Society, thanked Mr. Butt for the great trouble he had taken in the matter of the Chain. It was a very happy suggestion on the part of Mr. Butt that the Presidential Badge should be provided with a chain, and that each link should be commemorative of a past-President of the Society. He fully recognised that the Badge and Chain was suggestive of the very great amount of responsibility resting upon the President of the Pharmaceutical Society, because whenever he wears that Badge it would remind the President who wears it that he should live up to the office he holds. The number of illustrious names on the links of the chain showed that the Pharmaceutical Society has a history, and a very great history. In that connection it was interesting to know that the whole of the past-Presidents of the Society are dead with the exception of those who are now on the Council, and when they recalled the names of the past-Presidents they would remember that it was only within the last few days that one of them passed away—he referred to the late Mr. John Thistlewood Davenport. It was a very great honour to be the first President of the Society to wear the Badge and Chain, particularly as it was given, first of all, as a memorial of the Diamond Jubilee of the Society, and the Chain had now been presented in commemoration of those who held the office of President during the period of sixty years. They all knew the immense amount of interest that Mr. Butt had always taken in the work of the Society, and he knew that Mr. Butt felt very strongly what he had said that morning. He was not sure that they quite realised the responsibility that rests upon the Pharmaceutical Society. It was a very important factor in the affairs of the country, and he felt that the Badge would help on the good work of the Society. Mr. Butt had referred to the Badge being worn by the President on public occasions. He recognised, of course, that the Badge and Chain was not a present to him as President for the time being, but to the Society, and he could promise Mr. Butt and the friends present that he should do his best to keep up the reputation of the Society and for the members of the craft. On behalf of the Pharmaceutical Society he thanked Mr. Butt very much for the trouble he had taken. There must have been a considerable amount of work connected with the matter, and he was sure all would acknowledge that the Badge and Chain were very handsome, and satisfactory in every way.

Mr. Carteighe said he should like, in the presence of a number of members of the Society who knew the late Mr. Davenport, and in the presence of a great many of his personal friends, to express to his son, Mr. Horace Davenport, their sympathy and regard for his father. Mr. Davenport represented a time when the Presidents of the Society were strong men. He was not only a very good administrator, but he had one great qualification—viz., his extreme kindness, courtesy, and geniality. With the exception of Mr. Stephen Darby, the late Mr. Davenport was the only examiner left who was an examiner when he (Mr. Carteighe) and Mr. Martindale were examined, and he had on many occasions enjoyed his kindness and hospitality. They all knew that his son, Mr. Horace Davenport, was also a strong man, and he felt it to be a privilege to convey to him their sympathies.

Mr. H. Davenport said he felt very deeply what had been said by Mr. Carteighe. He could not say, however, that he was surprised at the esteem in which his father had been held, because he had been the best possible father, and had practised the most extreme unselfishness all his life. It had been a great comfort to know that he passed away happily and in perfect faith. He thanked all present from the bottom of his heart.

Mr. W. Hills then proposed that a very hearty vote of thanks be accorded to Mr. Butt for the trouble he had taken in securing the Chain.

The Vice-President seconded the motion, which was supported by Mr. Martindale, and carried unanimously.

Mr. Butt, in returning thanks, said that at any time he should be at the service of the Society.

The proceedings then terminated, and the members of Council took their places for the ordinary business of the Council, the President wearing the Presidential Chain for the first time. An interesting circumstance at the meeting was the presence of two of the founders of the Society—Mr. Lloyd Bullock and Mr. Elias Bremridge.

The Presidential Chain.

The following is a list of the Presidents of the Society whose names are inscribed on the links of the Chain, together with the names of those who have provided the links of the Chain:—

Inscription.	Link Provided by
William Allen, F.R.S., 1841-43	Mr. Cornelius Hanbury (of the firm of Allen and Hanbury).
C. J. Payne, 1844	Subscription.
John Savory, 1844-48	His grandson, Mr. Arthur L. Savory.
T. N. R. Morson, 1848-49, 1859-61	His son, Mr. Thos. Morson.
Peter Squire, 1849-50, 1861-63	His son, Mr. Peter Wyatt Squire.
William Ince, 1850-1851	His sons, the Rev. William Ince and Mr. Joseph Ince.
Thos. Herring, 1851-52	His nephew, Mr. W. C. Herring.
J. Gifford, 1852-53	Subscription.
Henry Deane, 1853-55	His son, Mr. Henry Deane, and his grandson, Mr. Harold Deane.
J. T. Davenport, 1855-56	Mr. J. T. Davenport, since deceased.
Jacob Bell, 1856-59	Mr. Walter Hills (of the firm of John Bell and Co.).
G. W. Sandford, 1863-69, 1870-71, 1879-80	His niece, Miss Sandford, and Mr. Charles Blake (of the firm of Blake, Sandford, and Blake).
H. S. Evans, 1869-70	The firms of Messrs. Evans, Sons, and Co., and Messrs. Evans, Lescher, and Webb.
A. F. Haselden, 1870-73	Subscription.
T. Hyde Hills, 1873-76	His nephew, Mr. Walter Hills (of the firm of John Bell and Co.).
John Williams, 1876-79	His brother, Mr. Henry Williams.
Thos. Greenish, 1880-82	His sons, Mr. T. E. Greenish, and Professor H. G. Greenish.
M. Carteighe, 1882-96	Mr. Michael Carteighe.
Walter Hills, 1896-99	Mr. Walter Hills.
William Martindale, 1899-1900	Mr. William Martindale.
G. T. W. Newsholme, 1900-02	Mr. G. T. Wilkinson Newsholme.

The ends of the chain are attached to a centre ornament, from which depends the Badge with the arms of the Pharmaceutical Society. The centre ornament bears the inscription:—

Past Presidents
P.S.
of
Great Britain.

The illustration on page 23 represents the chain as it rests in its case, where it covers an area of about fifteen by nine and a half inches. The links are of gold, with enamelled borders.

PHARMACEUTICAL SOCIETY.

MEETING OF THE COUNCIL.

WEDNESDAY, JANUARY 8, 1902.

Present:—

Mr. G. T. W. **Newsholme**, President;

Mr. C. B. **Allen**, Vice-President;

Messrs. Atkins, Carteighe, Cooper, Cross, Gifford, Glyn-Jones, Harrington, Hills, Martindale, Park, Savory, Southall, Storrar, Symes, Taylor, Wootton, Young.

The **Secretary** read the minutes of the previous meeting, which were confirmed.

The Late Mr. Davenport.

The **President** said that before proceeding with the ordinary business of the Council he should like to refer to the death of Mr. John Thistlewood Davenport, who for a great many years was a member of the Society, and always took the deepest interest in the Society's work. It would be remembered that Mr. Davenport had held the chief offices in connection with the Society. He joined the Society in 1842, was a member of the Council from 1851 to 1865, and acted as an examiner from 1867 to 1875; he was Vice-President from 1853 to 1855, and became President for the year 1855-56. Mr. Davenport, as many of those now on the Council would remember, had a great deal to do with the passing of the 1852 Act. He occupied the presidential chair during an important time in the history of the Society, being President between the time of Mr. Henry Deane and Mr. Jacob Bell, and when those names were associated with Mr. Davenport's they knew that he had a great deal to do with the history and advancement of the Pharmaceutical Society. He was quite sure that those who take an interest in pharmacy would never forget those names. When they remembered the work that Mr. Davenport and many others did in the early history of the Society in organising its forces, they would recognise that he had done a great deal to pave the way for the Society during the past forty or fifty years. He could not speak personally of Mr. Davenport, but as a reader of the Journal he had known him. In moving the following resolution of condolence with the family, he might mention that it was quite within a stone's throw of the Society's house that Mr. Davenport started business, he believed, in 1839, in Great Russell Street:—

That this Council learns with deep regret the death of John Thistlewood Davenport, a past-President of the Society, and for nearly sixty years one of its most loyal and steadfast members. The living interest he took in the advancement of the educational and political influence of the Society found expression in his conscientious services as a member of the Board of Examiners for England and Wales, as a member of the Council for fifteen years, and by the fulfilment of the duties of Vice-President and President of the Society. All he did bore the stamp of his upright and manly character, and his death removes from the list of members one whose unselfish labours in the early years of the Society's history merit the grateful memory of British pharmacists. The Council desires to tender to the family of Mr. Davenport its sincere sympathy, and to assure them of the high appreciation in which the work of the deceased will ever be held by his former colleagues.

The **Vice-President**, in seconding the vote of condolence, said that, like the President, he could not add anything from his personal knowledge to what had already appeared in the Journal, but it had been his good fortune on one or two occasions to meet Mr. Davenport, and he had been impressed by one thing—his remarkable presence and general geniality of manner.

Mr. **Carteighe** said Mr. Davenport represented, probably without exception, the last of the set of men who were examiners and councillors before the 1868 Act, and probably had a great deal to do with the passing of the 1852 Act. Mr. Davenport began his career as an operative chemist. He went to the University College to get some knowledge of science, and then applied that knowledge to business, as did also Mr. Morson and one or two others at that time, and it was sad to think that they were all dying off. Mr. Davenport was his senior, but as a young man he was associated with him on the Council and as a member of the Board of Examiners, and he also had the privilege of being associated with him in ordinary social life. He was a man of extreme amiability, a good classic scholar, and one of the few men who undertook the Preliminary Examination in the pre-Pharmacy Act days, when schoolmasters brought students up to London to see whether they possessed sufficient knowledge to pass their examinations. Mr. Davenport had the advantage to achieve success early in life, and he retired from business at a comparatively early age, going to Brighton. He well remembered the time, about thirty years ago, when the British Pharmaceutical Conference was held at Brighton. Those who had the privilege of attending the Conference and remained for the subsequent meeting of the British Association would probably remember his hospitality on that occasion. Mr. Davenport's house was close to the hotel, and practically all who attended the Conference were made free of his house. He remembered with the greatest pleasure how the younger men in pharmacy were intensely delighted with Mr. Davenport. He was a man of culture, and in all his proceedings was a most unassuming man—one of the men who might be correctly described as "a born gentleman."

Mr. **Martindale** referred to his connection with Mr. Davenport in the capacity of examiner, and went on to say that his geniality to the candidates who came up to be examined was most marked. After he left for Brighton he frequently met him on the Drug Committee of one of the London hospitals. His charitable works in Brighton and elsewhere were well known.

Mr. **Cooper** said that, having been examined by Mr. Davenport, he would like to add his appreciation of his kindness. At that time he was studying very hard under the late Mr. Braithwaite—in fact, he only had four hours' sleep out of the twenty-four—and when he presented himself to Mr. Davenport for examination he was in an extremely nervous condition. Mr. Davenport recognised that, and he took him on one side for a quiet talk before proceeding with the subjects of examination. He felt sure that if it had not been for his extreme kindness he would not have got through.

Mr. **Atkins** said he desired to offer a word of testimony to the well-deserved eulogy of the late Mr. Davenport. He had some personal knowledge of him, and he always found him uniformly courteous. They had been talking of links that morning. A link had just passed away—a very important link in the history of the Society, and he had been thinking how appropriate it was that when such men passed away they should express their appreciation of them. Mr. Carteighe had referred to the Conference meeting at Brighton, and it suggested to him an event which illustrated very aptly the character of Mr. Davenport. Mr. Henry Groves and his young Italian wife were present at that meeting, and they, with several others, were invited to Mr. Davenport's house to share his hospitality, and he should never forget the way in which the Italian lady tried to express to Mr. Davenport her sense of his great geniality and courtesy to her.

Letters from Absent Councillors.

The **President** said a letter had been received from Mr. Corder expressing his regret at being unable to be present. Mr.

Corder's son, he was sorry to say, was suffering from a great affliction. He was sure they all sympathised with Mr. Corder in his trouble, and regretted the cause of his absence. A letter had also been received from Mr. John Harrison, stating that he would be unable to be present.

Examinations in Edinburgh.

Report of the Government Visitor.

The Secretary reported that a letter had been received from the Privy Council with a copy of Dr. Balfour Marshall's report on the Society's examinations in Edinburgh. (See last week's *P.J.*, page 8.)

The President said the report of Dr. Balfour Marshall was a very valuable one, and he should like to direct attention to his remarks concerning a compulsory curriculum. Members of that Council and of the Boards of Examiners had long held the opinion that a compulsory curriculum would be an advantage. It would save the candidates much worry and anxiety, and would save their pockets.

The Secretary then read the following

Report of Examinations in Edinburgh.

January, 1902.

	Candidates.	Passed.	Failed.
Major	3	2	1
Minor	91	28	63
	94	30	64

Election of Members.

The following persons, having tendered their subscriptions for the current year, were elected "Members" of the Society:—

Baker, Charles Fred.; Calcutta
Barr, Annie Millar; Gourock
Bennett, Reginald Robert; Clapham
Blockley, Frederick G.; Leicester
Bloomfield, Frank H.; Birmingham
Buckley, James Alfred; Lees
Byron, George Henry; Nottingham
Campbell, Wm. M.; Shepherd's Bush
Challinor, Samuel G.; Honor Oak
Chisholm, Alexander; Killamarsh
Cleworth, John; Manchester
Cofman, Joseph; Bloomsbury
Corlett, Thomas Henry; Liverpool
Crabtree, Abraham Lord; Rochdale
Cruickshank, John Grant; Southsea
Davies, John; Tonypandy
Dickins, Frederick; Embsay
Dixon, Ernest Rowlatt; Lincoln
Dobson, George Nelson; Morpeth
Downie, James Walker; Glasgow
Eldred, Charles Wm.; Shrewsbury
Elliott, Frederick Wm.; Bolsover
Elliott, John Johnson; Manchester
Evans, Daniel Ashton; Chelsea
Evans, Moses Thomas; Stockwell
Fairlee, Alfred James; Acton
Ferguson, Thomas Walter; Glasgow
Forbes, John Jonnstone; Denny
Gale, Percy; London
Glasspool, Herbert G.; Shoreham
Goodyear, Cyril James; Cromer
Green, John Holt; Bilston
Grice, Walter Thomas; Calcutta
Guthrie, James Strachan; Oxford
Hall, Albert Tuton; Birmingham
Hall, Louis Clarence; Northampton
Heworth, James Henry; Hackney
Hitchcock, James; Duffield
Hooper, Elsie Seville; Clapton
Howorth, Christian W.; Plumstead
Hughes, Ernest James; Birmingham
Husband, Arthur; Leven
Inglis, Robert; Glasgow
James, Fenwick; Workington
Jarrett, Jarret R.; Trawsfynydd
Jones, John; Ponty Bodkin
Keen, Walter Henry; Penzance
Lawson, John; Highbury
Lea, Frederick; Earl's Court
Lewis, John; Mile End
Macadie, William; Cardiff
McPherson, Fredk. C.; Newburgh
Madgshon, Flora C.; Jarrow-on-Tyne
Mager, William Kelk; Worthing
Milestone, Robert; Leeds
Morris, William; Manchester
Moss, Arthur; Sale
Needham, Thomas; Huddersfield
Patterson, George Rae; New Hirst
Pethick, Henry Thomas; Stratton
Philip, Charles; London
Pratt, Robert Rowles; Kilburn
Priestman, W.; Parkhurst (I.W.)
Pryke, Harry Kenneth; Northfleet
Quarry, John; Saltcoats
Richards, John; Penarth
Robertson, Sidney; Bedford
Rogerson, Bernard A; Bradford
Simnett, Herbert F.; Hampstead
Sinca, Reginald Arthur; Kennington
Skinner, James Auld; Leith
Snow, Charles Metcalfe; Bradford
Soddy, Francis William; Stevenston
Strachan, Robert Guild; Dundee
Taylor, Arthur Frederic; Bradford
Taylor, John; New Brighton
Tilsley, Ethel Maud; Rotherhithe
Todd, George; Hollinwood
Towers, William L.; Chatham
Tranmer, Henry M.; Smethwick
Trounson, Herbert James; Watford
Walker, Henry James; Lowestoft
Watt, William Hamilton; Greenock
Weaver, Theophilus; Birmingham
Welton, Edward G.; Thorpe Hamlet
West, Frederick; Richmond
White, William Carter; London.

Election of Student-Associates.

The following persons, having tendered their subscriptions for the current year, were elected "Student-Associates" of the Society:—

Aves, Owen; Bridlington Quay
Barltrop, Georgina E.; Walthamstow
Barron, John L.; West Hartlepool
Burgis, Wm. Guisford; Hampstead
Campbell, R. Spencer; Abergavenny
Cross, Jonn William; Guildford
Dallimore, Frank; Ormskirk
Fox, Thomas Bevan; Sheffield
Fry, Albert; Taunton
Green, James; Wallington
Harden, Ernest C., Newton Abbot
Hawley, John P.; Winchcombe
Hindle, Fred.; Preston
Hodges, Francis Sully; Bristol
Jones, Roger Wilfrid; Ruabon
Kirk, William Edward; Barrhead
Lester, Aubrey Victor; Dover
Llewellyn, A. D.; Ystrad Rhondda
Loten, Reginald Arthur; Hornsea
McGregor, Robert; Edinburgh
Mortimer, Harold; Cleckheaton
Murrell, Wm. Fredk.; Hartlepool
Naylor, Richard E.; Chesterfield
Palmer, Sidney Thomas; Leicester
Payne, Glynton, G. J.; Haverfordwest
Peverell, Arthur; Bishop Auckland
Prime, William A.; Birmingham
Quass, Gustav M.; Glossop
Sant, Esdras, Pontypridd
Schofield, Harry; Grimsby
Sirvai, Pestonji Hormusji; Clifton
Sumption, William C.; Blackwood
Sunman: William Joseph; Luton
Thompson, Edward J.; Edinburgh
Todd, James W.; Sunderland
Todd, Tom Hart; Ulverston
Treneer, Joseph M.; Cheltenham
Walker, George T.; Birmingham
Ward, John Frederick; London
Weller, Cecil; High Wycombe
West, Robert Henry; Halifax
Williams, James C.; London
Young, Arthur Edward; Leicester

Restoration to Register.

The name of the following person, who has made the required declaration, and paid the restoration fee of One Guinea, was restored to the 'Register of Chemists and Druggists':—

Alan McConnal, 258, South Road, Walkley, Sheffield.

Several persons were restored to the Society upon payment of the current year's subscription.

Finance Committee.

The report of this Committee gave the following figures:—

	£	s.	d.
Balance in December	£1,618	2	10
Receipts	2,196	13	4
	3,814	16	2
Payments during December	2,346	7	5
	£1,468	8	9

Payments to the amount of £913 3s. 8d. for the current month were recommended.

The Secretary stated that just prior to the Council meeting a telegram was received from Mr. Hill, stating that £200 would be required for current expenses in Scotland.

The President, in moving the adoption of the report, directed attention to a donation of £1 10s. from the Liverpool Pharmaceutical Students' Association, that amount being left from the winding up of the Association.

The adoption of the report was seconded by Mr. Harrington, and carried, and it was also agreed to authorise the Treasurer to sign a cheque for £200 for current expenses in Scotland.

Benevolent Fund Committee.

The Secretary said that, despite the unpropitious general conditions existing during the past year, and the many calls made on behalf of special charities in connection with the war in South Africa, the Benevolent Fund subscriptions are within £30 of the amount contributed in 1900. There was reason to believe that even a better result might have been achieved if it had been possible, according to intention, to furnish every Divisional Secretary with a list of unpaid subscriptions in his division, and a request to look them up. All that could be done in that way was to send out some two hundred lists to the larger centres; that was accomplished with much difficulty, late working, and putting aside of ordinary duties. Pressure of ordinary routine work as well as the smallness of the office staff were thus responsible for the circumstance that nearly two hundred divisional officers were not specifically asked to canvass for the Fund. During the coming year he hoped to be able to communicate with all his local colleagues, soliciting their aid in obtaining increased support to the Benevolent Fund—support of which it stands urgently in need.

The report of the Committee included a recommendation of grants to the amount of £130 in the following cases:—

Widow of a member (64). Has had previous grants. (Shepherd's Bush.)

Widow of a chemist and druggist (66). Has had previous grants, (Rotherhithe.)

Widow of a chemist and druggist (38). (Oxford.)

Widow of a chemist and druggist (72). Has had previous grants. (Forest Gate.)

Widow of a chemist and druggist (68). Has had previous grants. (Shepherd's Bush.)

Widow of a member, who was elected an annuitant in 1895, and died last month (57). (Croydon.)

Chemist and druggist (55). Had previous grant. (Ipswich.)

Chemist and druggist (78). Has had previous grants. (Tufnell Park.)

The two unsuccessful candidates at the recent election of annuitants were granted sufficient amounts to last until the next election. Two cases were deferred for further consideration, and one was not entertained.

The President said, when they remembered the enormous calls that had been made upon the people of this country during the last two years, he thought they might congratulate themselves that the Benevolent Fund had not suffered more than it had. He knew that certain charitable bodies had suffered considerably since war broke out in South Africa.

The Vice-President moved the adoption of the report. He thought it was very gratifying that, although last year there were so many calls upon the generosity of the public, the Benevolent Fund subscriptions practically remained level with what they had been in former years. Perhaps no one regretted more than the Secretary that he had not been able to put each local officer of the Society into touch with those who had not paid their usual subscriptions to the Benevolent Fund, but it was to be hoped that next year that would be done. He thought they might look forward to largely increased subscriptions to the Fund, because a large increase was really required. The election of additional annuitants and the payment of more casual grants had made a larger income a necessity. The money paid in casual grants during the last two or three years had been considerably more than it used to be. Some years ago it was generally about £400 or £500 a year; three years ago it amounted to £700 a year, and last year the Committee gave grants to the amount of nearly £1,000. In regard to the casual grants, Mr. Allen went on to show what an immense amount of good is being done, because the casual grants practically became a small annuity. He sincerely hoped that when the Divisional Secretaries were called upon they would respond very cordially. The Committee met the previous day and distributed £130, and amongst those relieved were two who were among the unsuccessful candidates at the recent election of annuitants. It had been the custom to give the unsuccessful candidates a little help in the hope of carrying them on to the next election.

Mr. Atkins seconded the adoption of the report. In regard to the distribution of the £130 mentioned by the Vice-President in ten casual grants, he thought that a great many friends outside, in reading the Journal and other publications, did not sufficiently recognise the work that has been done by the Benevolent Fund Committee in paying out casual grants. About £1,000 had been distributed during the past year, and the success of the Fund must depend very largely upon the exertions of the Divisional Secretaries. He knew that they were often reminded of the bad policy of perpetual "dunning," but at this season of the year he did ask that pharmacists should do all they can to support the Fund. There were men who had retired from business, having made a competency, who directly they retired ceased their connection with the Society and all concerning it. He could give instances of men who, when approached, said, "Oh! but I have no longer any connection with the Society." He thought it was only fair that men who had "made their pile" should remember those who have been unfortunate in pharmacy.

Dr. Symes said there was one thing that seemed to lend force to the appeal of the Vice-President and Mr. Atkins, and that was that the £130 rather exceeded the money the Committee had to deal with.

The Secretary said he did not know whether the Council had quite followed the figures, but the Committee was really giving £130 out of £127, and that was taken from £200 which belonged to capital, so that the Fund was really in need of money.

The report was adopted, and the Secretary was then authorised to pay annuities on each of the quarter days in 1902.

Library, Museum, School, and House Committee.

The report of this Committee was as follows:—

The Library, Museum, School and House Committee met on December 11, 1901. The usual monthly statements respecting the Society's Libraries and Museums in London and in Edinburgh were received, and particulars of these statements are published in the *Pharmaceutical Journal* for December 14, 1901.

The Committee dealt with various administrative matters relating to the superintendence of the School and House, and the proper and efficient conduct of the other departments of the Society under the charge of the Committee.

The arrangements for closing the School and the other departments of the Society were agreed to, and ordered to be advertised in the Journal.

The School staff reported.

The Journal Sub-Committee reported that it had consulted with the Editor on various matters affecting the conduct of the Journal.

The Committee considered the communication remitted to it respecting the Carnegie Trust in its relation to pharmaceutical students. The further consideration of the subject was deferred.

The Committee also sat as a Research Committee, and received the reports of Professors Collie and Greenish on the work in progress.

The President moved, and Mr. Martindale seconded, that the report be adopted.

Mr. Gifford said he should be glad to have some information as to what was being done by the Journal Committee in regard to matters affecting the *Pharmaceutical Journal*.

The President said he did not quite know how to answer Mr. Gifford's question. Would he be a little more explicit?

Mr. Gifford said in the first place the feeling he believed was pretty general that the Journal would be better if it were brought more into line with modern ideas.

The President said that if Mr. Gifford had any suggestions to make as to the lines on which the Journal should be conducted, he was sure the Committee would be pleased to consider them if they were submitted in writing.

The motion was then carried.

Appointment of Divisional Secretaries.

Mr. C. J. Park moved, and Mr. J. F. Harrington seconded, that the following be appointed Divisional Secretaries for the divisions specified:—

SWANSEA BOROUGHS..........	Isaac, J. Griffith, Neath.
LINCS., Stamford	Prior, J. S., Stamford.
MONTGOMERYSHIRE	Ellis, H. E., Llanfair.
YORKS, Sowerby	Wright, G. B., Hebden Bridge.

The President said there was a vacancy at Cardiff. Mr. W. J. Sanders was appointed twelve months ago, and he had done very good work for the Society, and it was very unfortunate that he was unable to continue to act as Divisional Secretary.

The motion was then agreed to.

Appointment of an Assistant Examiner.

The PRESIDENT announced that a little difficulty had arisen in regard to the examinations now proceeding, in that one of the members of the Board of Examiners had been unable to be present. It was desirable that an assistant examiner be appointed, and he would move, therefore, that Mr. John Edward Saul be appointed to act as an assistant examiner during the remainder of the time taken up by the examinations.

This was seconded and agreed to.

The Poisons Committee.

On the suggestion of the SECRETARY, Mr. Walter Hills was appointed on the Committee which was elected at the November meeting of the Council to procure evidence and appoint witnesses for the Privy Council's Poisons Committee.

Removal From the List of Members.

The PRESIDENT, in pursuance to a notice of motion, moved :—

> That, Mr. Morris William Jenkins, of St. Clears, having failed to reply to the communication addressed to him by the President and Vice-President, in accordance with Section 17 of the Bye-laws, the Secretary be instructed to remove his name from the Register of members of the Society.

This was seconded by the VICE-PRESIDENT, and carried unanimously.

Correspondence.

The SECRETARY read a letter from Mr. John Dolbear, Hon. Secretary of the Oxford and District Chemists' Association, which stated that, at the recent meetings of that Association, the question of pharmaceutical legislation had been under discussion, and the members were unanimously of opinion that steps should be taken to protect the title of "chemist" to those legally entitled to use it by passing the Society's qualifying examination, and to those only. The members urged that this be the primary object aimed at in any future pharmaceutical legislation, and they hoped something might be done in the near future in that direction.

The SECRETARY also read a letter from Mr. C. E. Pickering, President of the Chemists' Managers' and Assistants' Association, in which he invited the members of the Council to a smoking concert which was to be held under the auspices of the Association that evening.

This concluded the public business.

EXAMINATIONS IN EDINBURGH.

January, 1902.

MAJOR EXAMINATION.

Candidates examined	3
„ failed	1
,, passed	2

Hallaway, Robert Railton ; Carlisle
Henderson, John McGregor ; Ayr

MINOR EXAMINATION.

Candidates examined	91
„ failed	63
,, passed	28

Alexander, William ; Banff
Appleyard, Herbert ; Leith
Backhouse, R. Stubbs ; Durham
Blechynden, A. ; Newcastle-on-Tyne
Chalmers, James ; Fraserburgh
Clarke, Henry J. ; Stockton-on-Tees
Crane, William T. ; Northampton
Daniel, Arthur W. ; Stoke-on-Trent
Hamilton, Robert ; Grangemouth
Hogg, William S. ; Musselburgh
Idris, Thos. H. Williams ; London
Longstaff, H. ; Gateshead-on-Tyne
Macdonald, William ; Inverness
McPherson, Neil ; New Aberdour
Martin, Thomas ; Arbroath
Merriman, Chas. E. B. ; Ilkeston
Palfrey, Thomas Alexander ; Selkirk
Paton, Andrew Hunter ; Ayr
Plenderleith, J. W. ; Edinburgh
Pool, Robert ; Annan
Rennie, Grace Isabel ; Birmingham
Smith, Alexander ; Macduff
Smith, William ; Newcastle-on-Tyne
Stewart, John S. ; Auchterarder
Straker, Thomas William ; Alnwick
Warmington, F. E. ; Leamington
West, David Buchan ; Fraserburgh
Wilkie, Peter Marshall ; Glasgow

Major Examination Questions (Edinburgh).

Saturday, December 28, *and Tuesday, December* 31, 1901.

CHEMISTRY.

Time allowed, Three Hours.

[Six questions only to be attempted, and at least two must be taken from Part II.]

PART I.

1. Mention any of the experimental investigations of Gay-Lussac which contributed materially to the progress of the atomic theory.

2. Starting from dolomite, describe how you would prepare—(*a*) crystallised magnesium sulphate; (*b*) magnesium hydroxycarbonate; (*c*) dry magnesium chloride; (*d*) magnesium pyrophosphate; (*e*) magnesium.

3. Give as particular an account as you can of the sources, preparation, and properties of boric acid.

4. What impurities are commonly present in commercial sulphuric acid? How would you detect the presence of each, and how would you prepare a quantity of the acid free from any of them?

5. How is metallic aluminium obtained? Describe the preparation of one salt in which aluminium is the metallic radical, and of one in which it forms part of the acid radical.

PART II.

6. What is the constitution of citric acid? How has this constitution been established?

7. Describe the preparation of isomeric dinitrobenzenes.

8. Describe the preparation of sodium sulphocarbolate and the nature of the change it undergoes by the action of heat.

9. By what analytical methods would you treat an aluminium silicate so as to obtain from it—(*a*) alumina, and (*b*) silica?

PHYSICS.

Time allowed, Three Hours.

[Six questions only to be attempted.]

1. Mention any of the sources of error that you are acquainted with in vapour density determinations made by Victor Meyer's method.

2. Give an outline of the ionisation theory of solution.

3. State what you know regarding methods for determining the molecular weight of a substance in solution.

4. What is the principle of the Leyden jar? Mention any practical applications of the same principle.

5. Explain what a voltmeter and an ammeter are respectively designed to measure.

6. Describe the construction of an incandescent electical lamp, and explain its behaviour when in use.

7. In what respect does the solar spectrum differ from that of a candle flame? What is the explanation of the difference?

8. Describe the construction of the microscope, and show, by means of a diagram, how the production of the magnified image is brought about.

BOTANY.

Time allowed, Two Hours.

1. Describe a chlorophyll corpuscle in detail. How are such corpuscles formed? Describe the function which they perform, and the conditions under which it goes on.

2. Give a general account of the Solanaceæ, and of the products of the order.

3. Describe fully the structure of the root of a Dicotyledon, and point out how it is suited to the function it has to perform.

PRACTICAL BOTANY.

Time allowed, One and a Half Hour.

1. Make preparations illustrating fully the structure of specimen A. Leave them for inspection. Make sketches from the preparations themselves, and give explanatory references.

2. Refer the plants B and C to their natural classification, givin reasons for your decisions.

3. Describe in detail specimen D.

MATERIA MEDICA,

Time allowed, One Hour.

1. State the commercial sources of Ergot, and describe it. Mention some of its active constituents; state which of them you think could be taken as a basis for standardising the drug, and give an outline of a method of carrying out the assay.

2. Ipecacuanha Root.—Describe the official variety. Give an outline of the simplest process for estimating its alkaloidal value. How are its two chief active principles extracted and separated one from the other?

PRACTICAL MATERIA MEDICA.

Time allowed, One and a Half Hour.

1. Name the leaf submitted, and prepare sections sufficient for its identification. Draw and describe them, and leave one of each for inspection.

2. The sample provided is a powdered Pharmacopœial drug. Identify it and report on its purity. If adulterated indicate the nature of the adulterant.

LIQUID DENTIFRICES.*

Benedictine Dentifrice.

Mitcham peppermint oil, 300 Gm., anise oil, 50 Gm., calamus oil, 5 Gm., are macerated in alcohol (96 per cent.) 10 kilo. for eight days, cochineal, 50 Gm., is rubbed down with cream of tartar, 50 Gm., and added to the above, after macerating for another eight days and filtered. Since cream of tartar is considered to be harmful to the teeth, an aniline carmine-substitute may be used instead of the cochineal and potassium bitartrate, to reproduce the distinctive opalescent red of the original preparation.

Pierre's Eau Dentifrice.

Macerate star anise fruits, 15 Gm., in alcohol (90 per cent.), 200 Gm., for three days, filter, and tint to a deep red with alkannin; then add oil of peppermint and oil of star anise, of each, 60 drops.

Eucalyptus Mouth-Wash.

Thymol, 25 Cgm., tincture of eucalyptus, 15 Gm.; absolute alcohol, 100 Gm.; oil of peppermint, 1 Gm. Mix. A teaspoonful to be used with a glass of water.

Kothe's Dentifrice.

Peppermint oil, 1; dissolved in alcohol (94 per cent.), 200.

Miller's Dentifrice.

Thymol, 25 Cgm.; benzoic acid, 3 Gm.; tincture of eucalyptus, 15 Gm.; absolute alcohol, 100 Gm.; wintergreen oil, 25 drops. One teaspoonful to be used in half a wineglassful of water.

Mentholin Mouth-Water.

Menthol, 2·5 Gm.; clove oil, 5·5 C.c.; peppermint oil, 57·5 C.c.; boric acid, 35 Gm.; tincture of myrrh, 135 C.c.; tincture of litmus, 60 C.c.; alcohol (90 per cent.), *q. s.* to make 1 litre. The menthol and boric acid are dissolved in 600 C.c. of the alcohol, the other ingredients added and the solution filtered.

Odol.

Alcohol (80 per cent.), 97 Gm.; salol, 2·5 Gm.; saccharin, 0·004 Gm.; peppermint oil, 0·5 Gm, with traces of clove and caraway oil.

Priestley's Mouth-Water.

Alcohol (90 per cent.), 6 kilo; water, 1·5 kilo; lemon oil, 15 Gm.; American peppermint oil, 40 Gm.; fennel oil, 10 Gm.; rose oil, 25 drops.

Salicyl Mouth-Wash.

Tincture of myrrh, 8 Gm.; salicylic acid, 5 Gm.; alcohol (90 per cent.), 500 Gm.; rose oil, 25 Cgm.; geranium rose oil, 50 Cgm.; tincture of musk, 2 drops; acetic ether, 1 Gm.; spirit of nitrous ether, 2 Gm.; glycerin, 12 Gm.; cochineal, 10 Gm.

Salol Mouth-Wash.

This preparation is recommended for use for the inflammation of the mouth and throat commonly affecting smokers. (1) Phenol, salol, of each, 5 Gm.; peppermint oil, star anise oil, of each, 10 Gm.; alcohol (90 per cent.), 120 Gm. Mix, 5 to 10 drops in a tumblerful of water. (2) Salol, 1 Gm.; spirit of peppermint, 50 Gm.; tincture of catechu, 2 Gm.

Saccharin Mouth-Wash.

(1) Saccharin, 2 Gm.; alcohol (90 per cent.), 200 Gm.; peppermint oil, 10 drops. (2) Salicylic acid, 6 Gm.; saccharin, 1·5 Gm.; sodium bicarbonate, 1·5 Gm.; eau de Cologne, 300 Gm.

Foaming Dentifrice.

(1) Quillaia bark, 60 Gm.; glycerin, 45 C.c.; sodium salicylate 17·75 Gm.; bergamot oil, 60 drops; winter green oil, 60 drops; clove oil, 10 drops; alcohol (90 per cent.), 30 C.c.; carmine solution, *q.s.* to tint, and dilute alcohol (68 per cent.) to make up to 500 C.c. The dilute alcohol and the glycerin are mixed; the quillaia bark first moistened with the mixture, and then percolated. The oils are dissolved in the stronger alcohol and mixed with the percolate, the salicylate is dissolved in the mixture to which enough carmine solution is added to tint it. The whole is then filtered through French chalk and made up to 500 C.c. with dilute alcohol. (2) Powdered white Castile soap, 35 Gm.; potassium carbonate, 75 Gm.; powdered rhatany root, 30 Gm.; glycerin, 1 litre; sugar, 1 kilo.; alcohol (90 per cent.), 4·5 litre; cassia oil, 15 C.c.; winter green oil, 20 C.c.; anise oil, 20 C.c.; clove oil, 15 C.c.; peppermint oil, 15 C.c. The potash is dissolved in cold water, 4½ litres, and the soap added to the solution. The oils are dissolved in the alcohol. The sugar and glycerin are dissolved in another 4½ litres of water and the rhatany root added to it. This mixture is then added to the soap solution, followed by the alcoholic solution of the oils; enough water is then added to bring the volume up to 22·5 litres. This is allowed to macerate, with frequent agitation, for fourteen days, then allowed to deposit, without shaking, for another fourteen days, when the clear liquid is decanted and the deposit filtered (3) Soap powder, 45 Gm.; glycerin, 128 C.c.; alcohol (90 per cent.), 175 C.c.; warm water, 175 C.c.; peppermint oil, 40 drops; winter green oil, 60 drops; clove oil, 20 drops; essence of vanilla, 15 C.c. The soap is dissolved in the hot water and the glycerin and vanilla extract added. The oils are dissolved in the alcohol; the solutions are mixed and tinted with solution of carmine; after standing for twenty-four hours it should be filtered through wood charcoal.

Scheibler's Mouth-Wash.

Aluminium sulphate, 20 Gm.; sodium acetate, 25 Gm., are dissolved in distilled water, 300 Gm.; allowed to stand, with frequent agitation for twelve hours, then mixed with alcohol (90 per cent.), 100 Gm.; peppermint oil, 5 drops, and sage oil, 5 drops, with vigorous shaking. After filtration, distilled water, 200 Gm., is added.

Thymol Mouth-Wash.

(1) Spirit of balm, 100 Gm.; tincture of myrrh, 5 Gm.; thymol, 0·5 Gm.; peppermint oil, 12 drops. Twenty to 30 drops to be used in a tumblerful of water. (2) Rhatany root, in powder, 500 Gm.; cassia bark, in powder, 100 Gm.; dried orange peel, 150 Gm.; alcohol (90 per cent.), 2,000 Gm.; distilled water, 1,000 Gm. Macerate for fourteen days, filter and add thymol, 15 Gm. (3) Thymol, 25 Cgm.; benzoic acid, 3 Gm.; tincture of eucalyptus, 15 Gm.; absolute alcohol, 100 Gm.; oil of winter green, 25 drops.

Viau's Mouth-Wash.

Salicylic acid, 1; chloroform, simple tincture of benzoin, tincture of cassia bark, of each, 10 Gm.; aromatic spirit, 130 Gm. Two teaspoonfuls to be used to a tumblerful of water.

Putze's Peroxide of Hydrogen Mouth-Wash.

Thymol, menthol, of each, 0·5 Gm.; absolute alcohol, 50 Gm.; tincture of rhatany, 30 Gm.; hydrogen peroxide (12 per cent.), 120 Gm. A few drops to be used with a tumblerful of water.

Dentifrice Tablets.

(1) Heliotropin, saccharin, of each, 1 Cgm.; salicylic acid, 10 Gm.; menthol, 1 Gm.; sugar of milk, 5 Gm.; spirit of rose, *q.s.* to mass. Divide into 100 tablets. The mass may be tinted red with eosin, or green with chlorophyll, or blue with

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* From the *Pharmaceutische Zeitung*, **46**, 608, and concluded from last volume, page 609.

indigo carmine. (2) Anise oil, 4 drops; cassia oil, 1 drop; lemon oil, 5 drops; cherry laurel oil, 1 drop; tincture of musk, 10 drops; clove oil, 4 drops; peppermint oil, 5 drops; powdered gum acacia, 5 Gm.; powdered sugar, 25 Gm. Compress into tablets without further addition.

LETTERS TO THE EDITOR.

The Spirit in Liniment of Soap.

I doubt whether the compilers of the British Pharmacopœia were as "pharmaceutically ignorant," as some men would have them appear to be, when they left out the mention of methylated spirit in the manufacture of soap and other liniments. The rectified spirit is used as a solvent, and therefore does not constitute a part of the medicament, but is an excess added as a means of conveying that medicament on to the part or parts affected. Methylated spirit contains dissolved tarry and oily impurities from the added wood spirit and paraffin oil. The impurities are thrown out when the spirit is mixed with water, forming a white cloud of insolubles. It naturally follows then that these non-volatile impurities when the alcohol has volatilised form a film over the dissolved particles of camphor, etc., or, in other words, a sort of emulsion with the dissolved medicament, and thus by preventing it from coming in actual contact with the part affected deteriorates the therapeutic value of the same. Rectified spirit, on the other hand, contains none of these impurities, and the compilers of the British Pharmacopœia, whether pharmaceutically ignorant or not, have in this case, at any rate, very wisely adopted a solvent that could be got rid of without in any way interfering with the therapeutic value of the medicament. I can well understand that good ol. rosmarini would, if added, cover all sentimental reasons, as well as the odour of the methylated spirit. But what I cannot comprehend is: Why a patient outside an hospital has not as much right to save a 1s. on a medical prescription as the one inside a hospital if the methylated and the rectified liniments are of equal value therapeutically. Are we overlooking the fact that a hospital should be a place for saving life and not for saving money! and that the dispenser there, at any rate, if not the house surgeon, should know something about the standard remedies a qualified chemist is supposed to supply on a medical prescription.

January 6, 1902. "Young Wales" (114/10).

Valerian Odour on Hands.

In reply to "F. T. A. H.," one of the best things for removing the smell of valerian, or valerianate of zinc, or CHI_3, from the hands, mortars, etc., is a thin paste of mustard and water, thus: ℞ Sinapis, P.B., ʒi., vel *q.s.*, pone palmâ sinistri manûs, adde paululum aquæ et misce digito manûs dextri ut fiat pasta tenuis quo—cum ambo manus, mortarium, pestillum, etc., bene fricentur et dein laventur aquâ tepidâ.

January, 8, 1902. "Quivis" (113/37).

Opodeldoc.

There appears to be a prevailing misunderstanding in many shops that when opodeldoc is asked for Linimentum Opii should be given. I find this error very common with new assistants—especially if they have been reared in the North of Scotland; and I have occasional complaints from customers that what they had before was "dark coloured," showing evidently that they had been supplied with the opium preparation. I presume there is no doubt but that Linimentum Saponis should be given when opodeldoc is asked for, and it would lead to uniformity were it always supplied.

January 4, 1902. "M." (114/5).

Glyco-Thymoline.

In your issue of the 4th inst. we notice a reply in "Replies to Correspondents" referring to Glyco-Thymeline. We beg to advise you that Glyco-Thymoline is made by Messrs. Kress and Owen Co., of New York, and that we are their British agents. This preparation is being now largely advertised to medical men, and any prescriptions received for it should be filled with the preparation which we are now introducing. We shall feel much obliged if you will be good enough to find a space in your reply column to add to the information given in your reply to "P. H. M." (69/1).

London, January 8, 1902. Thos. Christy and Co.

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply.

Marza Wines (A. C. O.—68/25).—The Marza wines are supplied by Messrs. Wild and Co., 1, Belvedere Road, Westminster Bridge, London, S.E.

Chemists' Ball, 1902 (E. N.—69/35).—No advertisement seems to have appeared this year, and particulars of the Ball will be found at page 33 of this week's Journal.

Fluoresceine (T. S.—69/4).—(1) You should be able to obtain it from any wholesale firm which supplies stains for microscopical purposes. (2) Sodium hydroxide solution.

Seeds (H. B. M.—69/6).—They are the seeds of *Plantago psyllium*, Linné, which, in common with those of several other European species of *Plantago*, are known as "Semen psyllii." They possess demulcent and emollient properties, due to the presence in the testa of a mucilage, closely resembling that of linseed. The seeds of *P. ispaghula*, Forskohl, a native of India and Persia, are now official in the Indian and Colonial Addendum to the British Pharmacopœia.

Glyceroles (W. T. N.—68/30).—They are proprietary preparations for which no formulæ have been published. It does not follow that an imitation of compound tincture of camphor in which glycerin replaces alcohol must necessarily be otherwise identical in composition with the official tincture. You might proceed by dissolving the camphor, etc., in warm glycerin and then diluting with water. It would, of course, be preferable to replace the opium by an equivalent quantity of morphine hydrochloride.

Poultry Powder (G. H. M.—69/3).—We cannot undertake an analysis of the powder you send. It does not appear to contain much in the way of active ingredients except a little gentian and cummin. You will find the following give good results with hens kept in a large run, when used in the proportion of two tablespoonfuls to the usual proportion of hot mash for twenty fowls:—Dried sodium sulphate, 1; gentian root in coarse powder, 1; cayenne pepper, 1; dried ferrous sulphate, 1; dried powdered oyster shells, 6. The oyster shells must be well dried before powdering or they will go putrid; if thoroughly dry the powder will keep well and is certainly efficacious.

Pharmaceutical Journal

SATURDAY, JANUARY 11, 1902.

A Copy of this Inset is inserted in every Copy of the *Pharmaceutical Journal* issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. The Inset can also be obtained by personal application, on the day of publication.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

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SALE AND EXCHANGE . Page 15a

Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words or less, 6d.; two initials or two figures counting as one word.

PART-TIME Assistant wanted for evenings, in good-class Dispensing business.—Apply, T. Miller, 5, Yarburgh St., Whalley Range, Manchester.

A COMPETENT qualified Assistant required for a good Dispensing business; outdoor. — Apply "R.," Hearon, Squire & Francis, Southwark St., London, S.E.

JUNIOR Assistant wanted (indoors).—Apply, personally if possibly, if by letter send all particulars, with salary required, to J. G. Shirley & Son, 2, Westbourne Grove, Bayswater, W.

FOREST GATE.—Assistant wanted.—Send reference, and state age, height, salary required (indoors), and enclose photo (to be returned), Hopper, Chemist, 319, Romford Rd., Forest Gate.

QUALIFIED Assistant, indoors, for good-class Dispensing. —Apply with full particulars, age, height, salary required, to D., c/o Messrs. Evans, Sons & Company, Hanover St., Liverpool.

WANTED, Improver, as Junior; outdoor; a young man just out of his time from a good provincial business preferred.—Apply, by letter, to X. Y. Z., c/o Messrs. Maw, Son and Sons, Aldersgate St., London.

WANTED, Assistant, about 22 years old; photographic knowledge preferred; about middle of February.—Apply, with full particulars, age, salary, &c., enclosing photo, to J. Holliday, Chemist, Warwick.

MESSRS. TIMOTHY WHITE Company, Chemists, Portsmouth, have vacancies in various parts of the South of England and Isle of Wight, for trustworthy young qualified Assistants; early prospect of management.

NATAL.—Assistant wanted who has had experience in both wet and dry rooms; able to make most preparations, and take entire charge. Salary, £12 10s.; £13 15s.; and £15. Three years' agreement to be signed; passage paid.—Apply, stating particulars, to W. D., c/o Pharm. Journal Office, 8, Serle St., W.C.

Assistants Wanted—Continued

YOUNG Pharmacist, with good chemical knowledge, wanted in a large manufacturing house; Major qualification preferred.—Apply, with full particulars of experience, etc., to G. C. K., c/o Pharm. Journal Office, 8, Serle St., W.C.

WANTED, qualified Lady Chemist to supervise the putting up of high-class pharmaceutical preparations. — In applying, full particulars of experience, age, and salary required must be given to L. C., Pharm. Journal Office, 8, Serle St., W.C.

QUALIFIED Assistant wanted (indoor), must have had good experience and be aged not under 22; several assistants kept; close 7.30.—Apply, giving full particulars and enclosing photo (if possible), to Clay & Abraham, Liverpool.

DURBAN. — Qualified Assistant wanted, salary £15; £16 10s.; and £18 per month for 1st, 2nd, and 3rd years respectively; agreement to be signed; second class passage paid; room supplied, but not board.—Apply, R. F., Pharm. Journal Office, 8, Serle St., W.C.

RUGELEY.—An Assistant (indoors) for good country business; aged about 23; qualified preferred; must be neat, quick, and accurate, with a little Photographic knowledge.—Apply, with full particulars, to George Averill, Pharmaceutical Chemist, Rugeley.

WANTED, by the beginning of February, a competent Junior Assistant, for a good class Retail and Dispensing business; salary from £40 to £50 (indoor), according to experience.—Apply, with full particulars, to P. Stacey, Pharmacist, High St., Teddington, S.W.

REGENT'S PARK.—Wanted, Junior Assistant of good address; indoors; state age, height, previous experience, references, and salary required.—Apply, personally or by letter, enclosing photo (to be returned), W. H. Bell & Co., Pharmaceutical Chemist, 96, Albany St., Regent's Park, N.W.

A LARGE FIRM, manufacturing Pharmaceutical Preparations, are open to entertain applications from able young Pharmacists, with a good knowledge of Therapeutics, to fill vacancies on their travelling representative Staff in India, the Colonies, the Continent and Home Districts.—Give fullest particulars as to age, experience, salary, etc., to I. C. H. D., c/o Mather & Crowther, Ltd., 10-12, New Bridge St., E.C.

Continued on next page.

Assistants Wanted—Continued

A QUALIFIED Junior ASSISTANT wanted, on February 1st, about 23 years of age, in a high-class Dispensing business in the West-end of London; 4 kept.—State age, height, salary required (indoors), and full particulars of experience, with photo, to CARNIS, Pharm. Journal Office, 8, Serle St., W.C.

SOUTH AFRICA.—Qualified Senior ASSISTANT wanted, who has had good experience, managing several juniors; must be thoroughly steady, smart and tactful; not over 32 years of age; good salary to competent man; three years' agreement to be signed; passage paid.—Apply, stating full particulars, to Q. S, c/o Pharm. Journal Office, 8, Serle St., W.C.

CAPE COLONY.—Wanted, good ASSISTANT, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £140; second year, £150; third year, £160; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, CAPE, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified ASSISTANT; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to STRAITS SETTLEMENTS, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

RELIABLE ASSISTANT; age 33; good references; London.—L., 560, Commercial Rd. East.

LOCUM, M.P.S.; town or country; disengaged.—W. SMITH, 12, Westfield Rd., Surbiton.

LOCUM or SENIOR; 30; qualified; experienced; disengaged.—STATIM, 49, Abbey Rd., N.W.

MANAGER; qualified; middle age.—ALPHA, 6, Victoria St., Cwmbran, Monmouthshire.

QUALIFIED; 26; good references; first-class experience.—U. F., 27, Talbot Rd., Bayswater.

LOCUM; disengaged 13th; 30.—M. P. S., 4, Harewood Villas, Harewood Rd., Merton, S.W.

DISPENSING, with time for Minor work. — H. S., 181, Warham St., Kennington, S.E.

QUALIFIED; 23; London preferred; good experience.—BRITLAND, 32, Albert Sq., Clapham Rd.

LADY (Minor) wants post, manufacturer or chemist.—RENNIE, Forest Rd., Moseley, Birmingham.

LOCUM; London and Provincial experience; Major; 34; abstainer.—HOOK, Monmouth St., Bridgwater.

QUALIFIED; 25; good experience; London preferred.—CHEMIST, Pharm. Journal Office, 8, Serle St., W.C.

ASSISTANT; qualified; 26; first-class experience.—HARDY, Junior, 99, Osborne Rd., Jesmond, Newcastle-on-Tyne

BRANCH MANAGER or ASSISTANT; high-class experience; Photography. — QUALIFIED, 4, Market Place, Market Rasen.

Engagements Wanted—Continued

PART-TIME, to take Evening Classes for Minor, Junior; age 21; tall; 4½ years' experience.—D. MORRIS, Pentneff, Llanymynech, Oswestry.

QUALIFIED Lady DISPENSER (Hall certificate) disengaged; London experience; resident or otherwise.—L., Pharm. Journal Office, 8, Serle St., W.C.

UNQUALIFIED; held post of sub-manager (with reference) for last 10 years; experience in every branch.—A. C., 1, Brondesbury Rd., Kilburn, N.W.

JUNIOR; tall; 3½ years' experience; desires situation as IMPROVER, about end of January; indoors preferred.—HUGHES, Post Office, Llandrillo, Corwen.

QUALIFIED DISPENSER (Lady) desires post with Doctor, Chemist, or Institution; fluent French; Bookkeeping; experienced.—AUSTEN, Chemist, Southampton.

QUALIFIED; 25; SENIOR or MANAGER; West End London, and best provincial experience.—D. DAWSON, 26, Cowlersby Lane, Milnsbridge, Huddersfield.

SMART COMMERCIAL (at present foreign agent) desires appointment to represent Wholesale or Manufacturing House.—STATIM, Pharm. Journal Office, 8, Serle St., W.C.

PART-TIME, mornings and evenings, Dispensing for Surgeon, by Dispenser to Public Institution; qualified; W.C. or S.W. district.—R.T., Pharm. Journal Office, 8, Serle St., W.C.

LOCUM TENENS; days, weeks; moderate; reliable; engagements booked forward.—T. C. BEACH, M.P.S., Windsor Edge, Inchbrook, Stroud, Glos. Telegrams: Beach, Nailsworth.

PHARMACEUTICAL CHEMIST seeks position as representative of good-class house in the Provinces ; excellent references and first-class experience.—BETA, 8, Serle St., London, W.C.

MANAGER or LOCUM.—A qualified Chemist and Dentist, long experience, for some years in business, now disengaged; good references.—M.P.S., c/o Hartshorn & Co., 26, Cullum St., London, E.C.

CHEMIST of good standing, experienced in high-class Pharmacy, with toilet requisites, seeks responsible position in health resort or superior neighbourhood; character unimpeachable; highest references.—M. P. S., 57, Oakfield St., Cardiff.

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows:—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

FOR Disposal, first-class DISPENSING and light Retail (South). Price £950, sine a/cs.—For particulars apply, M. Q., Pharm. Journal Office, 8, Serle St., London, W.C.

FOR Disposal, a good-class Dispensing and Retail BUSINESS, West-End; returns over £2,000 and increasing.—Full particulars on application to M.P.S., Pharm. Journal Office, 8, Serle St., London, W.C.

FOR immediate Disposal, owing to retirement of proprietor, an old-established Chemist and Druggist BUSINESS, situated in a thriving manufacturing town. Capital required about £500. No agents.—Write, CHEMIST, c/o Elliott's, 428, Strand, W.C.

TYNESIDE.—NORTHUMBERLAND.—For SALE, by private contract, the Freehold Premises containing a handsomely fitted-up corner shop and comfortable dwelling-house, with a Drug Store Business attached, also Wines and Spirits. — Apply to H. HAVELOCK, Auctioneer and Valuer, Hexham.

Sale and Exchange Column will be found OVERLEAF.

Businesses for Disposal—Continued

MODERN fitted Branch; perfectly stocked; main street, near G.P.O., Manchester suburb; sacrifice £320 nett cash; not equal to valuation; illness and assistants the reason. Splendid house, rent low; new colony of houses being built; large population. Photo on application. Lifetime chance.—Veritas, Pharm. Journal Office, 8, Serle St., W.C.

YORK.—To be sold by private Treaty, an old-established and well-known Chemist's Business in one of the principal thoroughfares in the centre of the City. The present owner and occupier is retiring from business. The Freehold Premises, Stock and Fixtures to be sold as a going concern. The purchaser will acquire a valuable business connection.—Apply, in first instance, to W. L., c/o Bleasdale, Limited, York.

LARGE MIDLAND TOWN.—Old-established (over 30 years) General, Retail and Prescribing Business for disposal; average returns for the past ten years £800; net profit £240; good shop, well fitted and stocked; busy thoroughfare; proprietor having bought larger business will accept £250 cash down and £200 by easy payments, to be arranged; this is an exceptional opportunity; every investigation courted.—Pax, Pharm. Journal Office, 8, Serle St., W.C.

Under Deed of Assignment.]

BLACKFRIARS ROAD, S.E., within three minutes' walk of Blackfriars Bridge.

MESSRS. CRONK have received instructions from the Trustee under a Deed of Assignment, to Sell by Auction, at the Auction Mart, Tokenhouse Yard, E.C., on Friday, January 24th, 1902, at Two o'clock precisely, the valuable Leasehold Shop and Manufacturing Premises, known as 58, Blackfriars Road, situated in the best part of this important thoroughfare, together with the goodwill of the old-established Business of Messrs. Powell and Barstow, Manufacturers of Surgical and Veterinary Instruments, Elastic Stockings, Speaking and Gas Tubing, Druggist's Sundriesmen, &c., and valuable Fixed Plant, Machinery, Engines, and Trade Fixtures.

It embraces an area on ground floor of about 1,300 superficial feet, and comprises a substantial building of four stories and a basement, with every accommodation for carrying on this profitable trade.

It is held on lease for a term of ninety-nine years, of which about 86½ years are unexpired, at the very low Ground Rent of £25 per annum.

The above will be sold as a going concern, and possession given on completion of the purchase.

Particulars and conditions of sale may be obtained at the Auction Mart, E.C.; of S. Cronk, Esq., Trustee, Chartered Accountant, 43 and 44, Lombard Street, E.C.; of Messrs. May, Sykes & Co., Solicitors, Suffolk House, Laurence Pountney Hill, Cannon Street, E.C.; and of Messrs. Cronk, Land Agents and Surveyors, 12, Pall Mall, S.W., and Sevenoaks, Kent.

Businesses Wanted

ADVERTISER is open to Buy a small good-class Business or Partnership with early succession.—R. Belben, 13, Shirley Park Rd., Shirley, Southampton.

A GOOD-CLASS Dispensing and Retail Business, yielding a nett profit of about £200; must bear full investigation.—State full particulars, which will be treated in strict confidence, Alpha, 8, Serle St., London, W.C.

MESSRS. BERDOE & CO. have clients desirous of purchasing businesses in Surrey, Sussex, Hampshire, Devon, Yorkshire, Suffolk, and the Midlands. Returning £700 to £3,000. Immediate sales can be effected. Terms on application; correspondence invited.—Messrs. Berdoe & Co., Valuers, 35, Jewry St., City.

CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., Chemists' Transfer Agents, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

The Business conducted by Messrs. Orridge & Co. has been known as a Transfer Agency in the advertising columns of the Pharmaceutical Journal since the year 1846, and is well known to all the leading firms in the Trade.

VENDORS have the advantage of Messrs. O. & Co.'s direct attention and advice as to value without any additional fees.

PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

Terms for Valuation on application.

THOMAS TOMLINSON & SON

Chemists' Transfer Agents and Valuers,

9, NEW CANNON STREET, MANCHESTER.

VENDORS saved time and trouble by consulting before offering for sale. PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address,* "Tomtom."

Messrs. BERDOE & CO.

Expert Stock-takers & Valuers

Stock-taking is a necessity, and we undertake the work at the smallest possible cost, and guarantee not to upset the routine of business in the slightest degree. Terms on application. Businesses sold, valued and investigated. Note the address:—

35, JEWRY STREET, FENCHURCH ST., CITY.

OPENING A PHARMACY.

IF you are about to start in business, do not fail to apply to H. Poths & Co., 4, 5 and 6, Bury Court, St. Mary Axe, London, E.C., for one of their price lists giving full particulars of sets of shop bottles and jars and lists of labels, thus saving an immense amount of labour and time.

CHEMISTS WHO WISH

to make Up-to-date Improvements, Alterations, &c., would do well to consult

H. MILLS, Shopfitter, Shop Front Builder, &c.

Works: 63-165, OLD STREET, LONDON, E.C.

CHEAP HOUSE for Window Enclosures, Drug Fixtures, Wall Cases, Dispensing Screens, Glass Facias, Stall Plates, &c.

Chemists fitted complete. Estimates Free.

Sale and Exchange Column will be found OVERLEAF.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Platinum Utensils and scraps for cash.—P. Rowsell, 9, Derwent Grove, Dulwich.

Invalid Carrying Chair.—Replies, address "Effigy," c/o Mr. Dodson, Sackville Mews, Bexhill.

Herbarium and Materia Medica specimens, collection of, suitable Minor exam.—G. E. Ainslea, Scotstounhill.

C. and D. Diary, 1902. Two shillings offered for a copy, carriage paid.—J. J., 28, Chadwick Road, Peckham, S.E.

Fernie's "Herbal Simples," second edition.—Particulars and price to A. R., Pharm. Journal Office, 8, Serle St., W.C.

OFFERED.

Slides, second-hand, 4½d. each; Hand-painted photos; lists free.—T. Wing, Chatteris.

Early Editions of Pharmaceutical Journals. Unbound, in perfect order. Complete years 1842-3; 20 odd numbers of 1841-4-5. What offers?—Thorpe, Earls Barton.

Perfume Ribbons, quarter inch wide, 36 yards long, post free, 1s. 6d. Blue, Pink, Green, Mauve, Crimson, Salmon (6 rolls, 7s. 6d.).—Edward Peck, East Dereham.

OFFERED—*Continued*

2 or 4 lbs. pot. iodid., bism. carb., salicin, iodoform, sod. salicyl., p.p. ol. theobrom.; 2 oz. argent. nit., codeia, atrop. sulph., loretin, morph. tart.; 1 doz. pept. pds., meat, milk, glyc. enules; Wt. qt. ext. ergot. liq., tr. aurant., tr. rhei co.—"Chemist," 10A, Vauxhall Bridge Rd., S.W.

Bagatelle Board.—Very handsome best mahogany folding bagatelle board, 8 ft. long, quite new and completely fitted, with 9 real ivory balls, cues, indiarubber cushes, markers, rules, lock and key. Nice size for family use or reading room, etc. Only £3 12s. 6d.; worth £6 6s. Approval before payment.—Mr. P. Ralph, Cambridge House, Lakenheath, Suffolk.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

PERSONALITIES.

Mr. C. J. Park, member of the Pharmaceutical Council, was on Monday elected President of the Plymouth Pedestrian Club.

Correction.—Owing to the negligence of the printer, we were not provided in time with a proof to check the note published last week referring to Herr Max Frölich, whose name was incorrectly printed Trölich.

Mr. George Cruickshank, who has been with Mr. George Milne, chemist and druggist, High Steret, Turriff, Aberdeenshire, for the past two years, has been presented with a handsome gold pendant and scarf-pin, by a few of his friends, on the occasion of his leaving Turriff for Aberdeen.

Mr. Thomas Hyde Hills, L.R.C.P., M.R.C.S., whose sudden death from tetanus was announced last week, was brother to Mr. Walter Hills, head of the firm of John Bell and Co., and past-President of the Pharmaceutical Society. Mr. T. H. Hills was an alderman, justice of the peace, and a former Mayor of Cambridge.

Mr. Frank Browne, formerly of the School of Pharmacy and now Government Analyst at Hong Kong, has been presented with a case of cutlery, by the members of the Hong Kong Football Club, on the occasion of his marriage. The Hon. J. H. Stewart Lockhart, C.M.G., in making the presentation, said he understood that one of the conditions of Mr. Browne's marriage was that he should not forsake his work in connection with the Club.

Mr. A. D. Breeze, a former Secretary of Plymouth, Devonport, and Stonehouse Chemists' Association, has been elected Chairman of Plymouth Mercantile Association for the ensuing year. Mr. Breeze was for five years Hon. Secretary of the Mercantile Association, and on retiring about twelve months ago was presented with a handsome gold watch, bearing an inscription appreciative of his excellent and energetic work. Acknowledging his election, Mr. Breeze said he felt more than honoured at the proud position they had placed him in by electing him to the chairmanship of the largest commercial Association in the West of England. Plymouth, as an industrial centre, was yet in its infancy. Still, they had works of some magnitude, and during the year he proposed to ask the members of the Association to accompany him on a tour of inspection of some of the local industries.

COMPANY INTELLIGENCE.

Coad's Refinery, Limited.—This company was registered on December 20, with a capital of £7,000, in £1 shares. Objects: To acquire the benefit of an invention relating to the treatment of fat, and to carry on the business of reducers and purifiers of fat and other substances, chemists, druggists, chemical manufacturers, oil and colourmen, etc. No initial public issue. Registered office, 4, Mitre Court, Fleet Street, E.C.

International Drug Company, Limited.—This company was registered on January 2 with a capital of £1,500 in £1 shares. Object, to carry on the business of chemists, druggists, drysalters, oil and colour men, importers and manufacturers of and dealers in pharmaceutical, medicinal, chemical, industrial, and other preparations, makers of chemical, photographic, surgical, and scientific apparatus and materials, etc. There is no initial public issue, and the company is registered without articles of association.

R. S. Clare and Co., Limited.—This company was registered on January 2 with a capital of £20,000 in £1 shares. Object, to acquire the business of distillers of tar, rosin, oil, and turpentine, manufacturing chemists, oil, grease, and varnish manufacturers, etc., now carried on at Liverpool as R. S. Clare and Co. No initial public issue. The first directors (to number not more than three) are the vendor, W. A. Meadows, and one other, to be appointed by the vendor. The remuneration of W. A. Meadows is fixed at £300 per annum.

Breeden and Co., Limited.—This company was registered on December 21, with a capital of £800 in £1 shares. Object: To acquire the business carried on by Gedge and Co., at Fishponds, Bristol, and to carry on the business of wholesale and retail chemists and druggists, dispensing chemists, manufacturers, and vendors of patent medicines, drysalters, medical herbalists, oilmen, mineral-water manufacturers, etc. No initial public issue. E. J. F. Breeden is managing director. Registered office: Caledonian House, Fishponds, Bristol.

REGISTRATION OF TRADE MARKS.

Instruction for Registration.

Application for the registration of a trade mark must be made on Application Form F, which costs five shillings, and can be obtained through any money-order office. The form contains general instructions for making the application, and, after being filled up, must be posted to the Comptroller, the Patent Office (Trade Marks Branch), 25, Southampton Buildings, London, W.C. If the mark applied for is one which can be accepted for registration, the applicant must next fill up the Registration Form I, which costs one pound, and can also be obtained through any money-order office. That form must also be sent to the Comptroller, when the mark will be advertised in the *Trade Marks Journal*, after which it will be duly registered if not opposed. A renewal fee of one pound must be paid by the proprietor of a trade mark every fourteen years.

Recent Application for Trade Marks.

*From the Trade Marks Journal, January 8, 1902.**

Class 1.

Steelphos.—242,202. A Preparation of a Chemical Nature for Use in Case Hardening and Annealing Metals. H. Ross and Co., trading as Steelphos Manufacturing Co., Olmar Wharf, Malt Street, Old Kent Road, London, S.E.; Waste Leather Merchants.—November 22, 1901. No claim is made to the exclusive use of the word "Steel."

Class 2.

Absorbine.—242,163. Chemical Substances used for Agricultural, Horticultural, Veterinary, and Sanitary Purposes. Wilbur Fenelon Young, 68, Monmouth Street, Springfield, Massachusetts, U.S.A.; Manufacturer.—November 21, 1901. Address for Service in the United Kingdom, care of J. E. Evans-Jackson and Co., 19-20, Holborn Viaduct, London. No claim is made to the exclusive use of the word "Absorb."

Class 3.

Herculoid.—241,705. Chemical Substances Prepared for Use in Medicine and Pharmacy. Evodie Louise Kernick, 85, Stacey Road, Cardiff; Patent Medicine Packer or Proprietor.—November 1, 1901.

Petronol.—242,074. Chemical Substances Prepared for Use in Medicine and Pharmacy. Reynolds and Branson, Limited, 14, Commercial Street, Leeds; Manufacturers.—November 18, 1901. No claim is made to the exclusive use of the word "Petro."

Absorbine.—242,164. Chemical Substances Prepared for Use in Medicine and Pharmacy. Wilbur Fenelon Young, 68, Monmouth Street, Springfield, Massachusetts, U.S.A.; Manufacturer.—November 21, 1901. Address for Service in the United Kingdom, care of J. E. Evans-Jackson and Co., 19-20, Holborn Viaduct, London. No claim is made to the exclusive use of the word "Absorb."

Morlaw.—241,135. A Medicine for Human Use. Andrew Morgan and James Scott Law, trading in Co-partnership as the Morlaw Co., 6, Gilmore Place, Edinburgh; Manufacturers of a Pharmaceutical Preparation.—October 8, 1901. "The essential particular of the Trade Mark is the word 'Morlaw,' and the applicants disclaim any right to the exclusive use of the added matter, except in so far as it consists of their own name."

Class 39.

Marveline.—242,390. Marking Ink. Henry Bell, 62, Quay, Waterford; Chemist and Druggist.—November 30, 1901. No claim is made to the exclusive use of the word "Marvel."

Class 42.

Milkolate.—242,048. Chocolate, Cocoa, and Confectionery. R. Lehmann and Company, Limited, Peninsular House, Monument Street, London, E.C.; Merchants.—November 16, 1901. No claim is made to the exclusive use of the word "Milk."

Eggeta.—242,260. Substances used as Food or as Ingredients in Food. John Edwin Garratt, 124, Southwark Street, London, S.E.; Merchant.—November 26, 1901. No claim is made to the exclusive use of the word "Egg."

Keystone.—242,641. Substances used as Food or as Ingredients in Food, but not including Corn, Flour and other Bread Stuffs, Cotton Seed Oil (for Edible Purposes) and Beverages not Alcoholic not Medicated and not Aërated and included in Class 42, and not including any Goods of a like kind to any of these excluded Goods. Stephen Smith and Company, Limited, 51, Malmesbury Road, Bow, London, E.; Manufacturers.—December 12, 1901.

Class 48.

Floritza.—241,374. Perfumery (including Toilet Articles, Preparations for the Hair, and Perfumed Soap). Vinolia Company, Limited, Malden Crescent, London, N.W.; and Lea Bank Works, Carpenters Road, Stratford, Essex; Manufacturing Chemists, Perfumers, Soap and Candle Makers, and Glycerine Distillers.—October 19, 1901.

MISCELLANEOUS AND LATE NEWS.

Readers are requested to send items of local news of general pharmaceutical interest. When newspapers are sent, the passages of interest should be marked.

Sheffield College of Pharmacy.—On New Year's Day a party of students attending the Sheffield College of Pharmacy, accompanied by the Principal and friends, visited the Rotherham Glass Works, by permission of Messrs. Beatson, and were shown the whole process of manufacture of flint glass and medical bottles by the works manager, Mr. Winterbottom.

Discovery of a New Parasite.—The *Times* reports that Sir Alfred Jones, Chairman of the Liverpool School of Tropical Medicine, has received a letter from Major Ronald Ross, who says:—"I have great pleasure in informing you that Dr. Dutton has made a very important discovery at Bathurst. He has found a new kind of parasite, which causes fever in human beings. The parasite is like the one which causes the fly disease among horses in South Africa."

The Educational Institute of Scotland, in response to a communication received from the Secretary of the Forfarshire and District Chemists' Association (see *P.J.*, December 14, 1901, p. 688), has replied that the information furnished has been carefully considered, and the conclusion come to is that the preliminary examination of the Institute cannot at present be held specially in Dundee, more particularly as the distance from Edinburgh is not great, and the expense of a separate examination would be very considerable.

Suicide by Butter of Antimony.—An inquest was held at Sheffield this week concerning the death of Frederick North Jacklin (63), a horsekeeper, who on Thursday, January 2, after obtaining a day off from work on account of feeling unwell, returned to the stables, where he was found lying on some straw. Handing a bottle to another employee, he said he had taken enough to kill him, and it was subsequently ascertained that the bottle contained butter of antimony, which, the Coroner remarked, was one of the most virulent poisons known. Verdict: "Suicide during a state of temporary insanity."

Milk Flour in Sweden.—According to the *Times*, the United States Consul at Gothenburg, in a recent report to his Government, says that Dr. Ekenberg, of that city, has made a discovery which will be of importance in dairy farming. He claims to have invented an apparatus by which milk can be brought into the form of powder, like flour in appearance, but possessing all the qualities of milk in concentrated form, moisture excepted. It is said that this milk flour is completely soluble in water, and can be used for all purposes for which common milk is employed. The milk flour does not get sour, does not ferment, and in the dry state is not sensitive to changes in the weather. It can be kept and transported in tin cans, barrels, bags, etc. The cost of production is estimated at about 27 cents per 106 quarts, and flour made from skimmed milk can be sold for about 13 cents per pound. At a recent meeting of the Academy of Agriculture Dr. Ekenberg exhibited samples of the milk flour, which received favourable comments. It is considered that the invention will be of the greatest importance for the utilisation of skimmed milk, which heretofore has largely been wasted, but in the dry form can be transported without losing any of its original qualities. The product mentioned is considered superior to the casein products "proton" and "proteide" now manufactured from milk by the aid of rennet, acid, or lye.

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*Any objection to the registration of an application for the registration of a trade mark must be stated on Trade Mark Form J, obtainable at any money order office, price one shilling. Such objection must be lodged with the Comptroller within a month of the date given above.

TRADE NOTES.

LOCKYER'S PORTFOLIO CALENDAR.—Mr. J. E. Lockyer, 87, Evelyn Street, Deptford, S.E., sends a very handsome portfolio containing twenty photogravures of the principal cathedrals of Great Britain, blotting pads, postal information, and calendar for 1902-1903. Mr. Lockyer will be pleased to send a copy of the calendar to those applying for same, on receipt of 3d. for postage.

FREE SAMPLES OF MONSONIA.—Mr. J. E. Kulling, of Grahamstown, Cape Colony, offers to forward free of charge to any chemist or doctor a sample bottle of his preparation of liq. ext. monsonia, which is prescribed in the treatment of dysentery, and for checking the hæmorrhage of typhoid fever. It will be within the memory of our readers that a paper by Dr. Gordon Sharp on Monsonia was read at an evening meeting in Edinburgh, in December, 1900, and a further note on this drug by the same author appeared in our columns last February.

BUSINESS CHANGES, NEW PHARMACIES, ETC.

Notices of business changes, etc., should be sent by Divisional Secretaries or the persons interested, and will then be inserted free.

MR. A. W. GREAVES, chemist and druggist, Market Place, Chesterfield, has taken into partnership his son, Mr. Sydney Chater Greaves, and the business will be carried on under the style of "A. Greaves and Son."

MESSRS. DAVY, HILL AND SON, YATES AND HICKS, announce that Mr. Arthur Bowdler Hill and Mr. Robert Yates have retired from their firm. The business is being continued under the style of Davy, Hill and Co., by the remaining partners—Charles Alexander Hill and Alan Hicks—who for some time have had the active management of the business.

PUBLICATIONS RECEIVED.

QUAIN'S DICTIONARY OF MEDICINE. By Various Writers. Third edition, largely rewritten and revised throughout, with fourteen coloured plates and numerous other illustrations. Edited by H. MONTAGUE MURRAY, M.D., F.R.C.P., assisted by JOHN HAROLD, M.B., B.Ch., B.A.O., and W. CECIL BOSANQUET, M.A., M.D., M.R.C.P. Pp. xviii. + 1892. Price 21s. net. London: Longmans, Green and Co., 39, Paternoster Row, E.C. 1902. From the Publishers.

MARKET REPORT.

LIVERPOOL, WEDNESDAY, JANUARY 8, 1902.

Now that the holidays are over business has become steadier, and the number of articles dealt in has increased both in amount and in variety. Prices show little alteration, except that Linseed Oil and Castor Oil are both cheaper. Cottonseed Oil went down a shade early in the week, but it has since recovered. In Chemicals there has not been much doing, and there is only one item worth mentioning—Sulphate of Copper, about which inquiry has been better and prices steadier.

AMMONIUM SALTS.—Carbonate, 3⅞d. per lb. Sal Ammoniac, 37s. to 41s. per cwt. Sulphate, £11 2s. 6d. to £11 5s. per ton.

BEESWAX—Has been selling well. 2 tons of Chilian, at £7 per cwt., and 7 blocks of Sierra Leone, at £6 6s. 3d. per cwt., ex store, at auction, are reported.

BLEACHING POWDER.—35 to 37 per cent., £6 15s. to £7 per ton.

BORATE OF LIME.—2,839 bags sold, ex quay, on private terms.

CANARYSEED—Has been in much better inquiry, and 200 bags of Turkish have found buyers at 37s. per 464 lbs.

CARNAUBA WAX.—Medium quality has been moving off well at steady prices.

COPPERAS—42s. 6d. to 45s. per ton.

COPPER SULPHATE—19s. to 20s. per cwt.

GUM.—Arabic sorts have been inquired after rather more of late, but this so far has not led to business.

OILS (FIXED) AND SPIRITS.—Castor Oil: In consequence of arrivals, mostly per ss. Logician, the price of Calcutta good seconds has settled down to 3⅛d. per lb., ex quay, and 3 3/16d. for store lots. To arrive, January-February shipments, 3¼d. is asked; 1st French, 3d. per lb.; 2nd French, 2⅞d.; on the spot and for Madras, December-January shipment, 2 15/16d. Olive Oil is inactive and demand slow, but prices are very steady. Linseed Oil has dropped down to the comparatively low price of 30s. to 31s. 6d. per cwt. for Liverpool makes, but is steady in tone. Cottonseed Oil, after a slight fall, has recovered, and now rules firm at 23s. to 24s. per cwt. Spirits of Turpentine have gone up to 29s. per cwt., and are evidently firmer, with a fair inquiry.

POTASSIUM SALTS.—Bichromate, 3¼d. per lb.; Chlorate, 3⅛d. per lb. Cream of Tartar is somewhat neglected, but is still quoted at 71s. 6d. to 78s. per cwt. Pearlashes, 41s. per cwt. Potashes firm at the full price of 26s. 6d. to 27s. per cwt. Permanganates, 40s. per cwt. Prussiate, 5½d. per lb. Saltpetre, £21 5s. to £22 5s. per ton.

SODIUM SALTS.—Bicarbonate, £6 5s. to £7 per ton. Borax, 13s. per cwt. Caustic, 76 to 77 per cent., £10 10s. per ton; 70 per cent., £9 15s. per ton. Soda Crystals, £3 2s. 6d. to £3 7s. 6d. per ton. Nitrate is in quiet demand, and is steady at 9s. 3d. to 9s. 4½d. per cwt.

LONDON, THURSDAY, JANUARY 9, 1902.

Business in Drugs and Chemicals has hardly fully recommenced since stock taking, still, there has been a certain number of orders placed. Quinine remains very quiet. The chief changes have been a slight reduction in price of Quicksilver (prices of Mercurials remaining, however, unchanged), a considerable advance in price of Eserine (Physostigmine), and Salts, a further advance in makers' price of Pilocarpine, and a very tangible reduction in price of Lithia Salts. Bromides continue very firm, Iodides unchanged, Acid Carbolic steady. For lack of space we confine ourselves to giving particulars of the one or two alterations in price referred to above.

CLOVES.—Of 556 bales Zanzibar in sale 456 bales found buyers, chiefly at 3⅞d. to 4d., with a few bales good at 4¼d. 5 cases Penang bought in, good bright picked at 1s. Privately the market for Zanzibar is easy, with sales at 4d. for January-March delivery.

ESERINE (PHYSOSTIGMINE).—In consequence of continued scarcity and dearness of the raw material, makers advanced price of Eserine 1s. per gramme to 6s. per gramme for the pure Alkaloid and to 5s. per gramme for the Sulphate and Salicylate Salts.

GINGER.—In fair supply, but no demand. About 800 packages Cochin practically all bought in, good B's at 75s., C's at 65s., washed rough bold at 55s., medium and bold rough at 48s. Japan: 300 bags bought in, limed at 42s. to 48s. Jamaica quiet: 189 packages offered, of which only 42 barrels sold, fair bright and very wormy at 44s. to 45s., lean wormy dark at 42s. 6d.

LITHIA SALTS.—In consequence of fresh competition, chiefly from America, the combined German makers reduced price about 5s. per lb. for the Carbonate, which they now quote 6s. 3d. per lb. for 2cwt. lots.

MERCURIALS.—So far makers did not follow reduction in price of Quicksilver, their quotations remaining, therefore, unchanged.

PILOCARPINE—Has again been advanced 6s. per gramme, viz., from 70s. to 76s. per oz. for the Muriate and Nitrate Salts in 1 oz. lots.

QUICKSILVER.—The importer has reduced his price 2s. 6d. per bottle, now quoting £8 15s. Second hand does not offer.

QUININE.—Makers still quote 1s. 2d. per oz. for the Sulphate for 1,000-oz. lots in 100-oz. tins, while in the speculative market business is very quiet, quotations being nominally 1s. 1¼d. per oz. for B&S and/or Brunswick on the spot, and 1s. 1¾d. for March delivery.

SPICES (VARIOUS).—Black Pepper: 338 bags Penang bought in at 5¾d., and 60 bags good Wynaad at 6⅜d. White Pepper: Nothing offered. Cayenne Pepper: 4 cases Nepaul bought in at 1s. 6d. Chillies: 246 bales Zanzibar bought in at 35s. Capsicums: 20 bags Egyptian sold, long red Natal character off-stalk at 45s. to 46s.; 608 bales Bombay mostly bought in; yellowish cherries off-stalk at 20s. Cinnamon: Of 193 bags Ceylon, 38 sold, good cuttings at 9d., and featherings at 6d. to 6½d. Quillings bought in at 7½d. to 8d., and chips at 3¼d. Mace: 1 case Penang sold, good pale, part wormy, at 2s. 4d.; 2 boxes Ceylon sold, palish curly part wormy, at 1s. 6d.; ditto wormy and mouldy, at 1s. 3d. Pimento: Of 1,446 bags, only 96 sold, ordinary to good small, at 3¼d. to 3⅜d.

THURSDAY'S DRUG SALES.

To-day's Drug Auctions comprised 18 catalogues, several of which contained a large number of lots, very many of which failed to sell. On the whole things were very quiet, Buchu Leaves selling at lower prices. Balsam Tolu sold fairly well. The following are the particulars as far as it has been possible to give same up to time of going to press.

ALOES.—2 cases fair hard Cape sold at 36s. per cwt. 18 cases Soccotrine were bought in at 75s. per cwt.

AMBERGRIS.—1 tin, nett about 64 oz., of fine flakey, part rather roughish coat, was bought in at 110s. per oz. Of other 7 cases 1 tin, nett about 11 oz., of fair flakey was bought in at 100s., remaining 6 tins consisting of ordinary undeveloped dark brownish to black quality, were taken out at 20s. to 45s. per oz. Other 1 tin of inferior quality was bought in at 40s. per oz.

ANNATTO SEED.—15 packages were taken out at 2½d. per lb. Other 5 bags at same figure. Other 39 bags at same price.

ARECA NUTS.—36 bags of good quality were bought in.

BALSAM COPAIBAE.—5 cases were bought in at 1s. 6d. per lb.

BALSAM PERU.—Of 3 cases 1 case sold prior to auction. Other 2 cases were taken out at 6s. 3d. per lb.

BALSAM TOLU.—Of 29 packages 26 packages good fair hard sold without reserve at 11d. to 11½d. per lb. Remaining 3 cases softish were bought in. Other 45 cases sold at 1s. per lb. for good softish down to 11d. per lb. for slightly drossy.

BUCHU LEAVES.—27 bales ordinary fair greenish rounds part sold at 8½d. to 9d. per lb., which shows decidedly lower value.

CALABAR BEANS.—10 packages were bought in at 1s. 6d. per lb.

CALUMBA ROOT.—144 bags small sorts of very indifferent quality were bought in at 9s. per cwt.

CARDAMOMS.—13 cases good wild native Ceylon part sold at 1s. 10d. to 2s. 10d. per lb., while good seed was taken out nominally at 2s. 6d. per lb. Other 9 cases Nargalla Ceylon were chiefly bought in at 1s. 10d. to 2s. 6d. Other 27 cases nearly all sold at 2s. 9d. per lb. for long fairly bold Mysores downwards, according to size, etc. Other 111 cases were nearly all bought in, only a few packages of the smaller sizes finding a buyer, fair to good seed selling at 2s. to 2s. 3d. per lb. Other 37 cases nearly all sold at 2s. 9d. per lb. for fairly bold Ceylon Mysores downwards, 1 case good Mysore seed fetching 2s. 4d. per lb. Other 2 cases seeds of less desirable quality sold at 2s. per lb. Other 6 cases small Malabar seeds sold, subject to owners' confirmation, at 1s. 10d. per lb. Other 42 cases, chiefly brownish Ceylon Cardamoms of all sizes, practically all sold at 1s. 2d. to 1s. 4d. per lb. Other 18 cases failed to sell. 2 cases good bold Mangalore were bought in at 3s. 3d. per lb.

CASCARA SAGRADA.—30 bags were bought in.

CASCARILLA BARK.—2 bales fine bright were bought in at 100s. per cwt., 2 bales fair stringy selling at 55s. per cwt.

CASSIA FISTULA.—6 bags good thin sold at 28s. per cwt.

CASTOR OIL.—100 cases East Indian were taken out at 3¼d. per lb.

CHAULMOOGRA OIL.—8 cases were taken out at 2s. 7d. per lb.

CHILLIES.—10 bales Zanzibar were bought in.

CINCHONA BARK.—21 serons crown and grey Bark sold at 6½d. per lb.; of 26 packages of Yellow Bark: 2 ballots sold at 1s. 8d. per lb., 2 bales at 1s. 6d., 1 bale at 1s. 5d., and 1 bale at 1s. 2d. per lb.

COCA LEAVES.—25 bales fair Truxillo were bought in at 1s. 6d. per lb. 16 cases fair Ceylon sold at 1s. 1d. to 1s. 2d. per lb.

COLOCYNTH.—11 packages very seedy Spanish were bought in at 1s. 2d. per lb.

COWAGE.—2 cases catalogued had been disposed of prior to auction.

CROTON SEEDS.—4 bags of very mixed quality sold at 15s. per cwt., subject to holders' approval. Other 29 bags good bright seeds had to be bought in.

CUBEBS.—44 bags of fair quality were taken out at 50s. per cwt.

ESSENTIAL OILS.—29 cases Australian Eucalyptus B.P., showing, according to Mr. J. C. Umney's analysis, 66·88 per cent. of Cineol, were bought in at 1s. 6d. per lb. Other 5 cases ditto were taken out at 1s. 4d. per lb. 5 cases ditto, of commercial quality, at 10½d. per lb. Other 19 cases Australian also failed to find a purchaser. 20 cases Portuguese were bought in nominally at 2s. per lb., as were 5 cases Oil of Cinnamon. 1 bottle nett, about 50 ozs., Ylang Ylang sold without reserve at 2s. 6d. per oz. Other 1 case was taken out at 4s. 6d. per oz. 2 cases West Indian Oil of Limes were taken out at 1s. 6d. per lb. 13 cases Java Lemon Grass Oil at 7½d. per oz. 20 cases Oil Cassia, showing by Parry's analysis 82 per cent. Cinnamic aldehyde, sold without reserve at 2s. 10d. per lb.

GALANGAL ROOT.—22 bales sold without reserve at 10s. to 11s. per cwt.

GRASS TREE GUM.—84 bags were bought in.

GUM AMMONIACUM.—19 cases, part free seed, part blocks, were all bought in.

GUM ARABIC.—5 cases picked gum were taken out at £8 to £10 10s. per cwt. 1 case grain selling at £5 and 1 seron hard gum at 40s. per cwt.

GUM BENJAMIN.—12 cases chiefly medium to fair seconds Sumatra were all bought in. Other 32 cases ditto part sold at £5 17s. 6d. to £6 per cwt. for fair thirds with inferior sides.

GUM CHICLE.—1 bale was bought in at 1s. 6d. per lb.

GUM ELEMI.—5 cases all sold at £5 to £5 5s. per cwt. Other 10 cases of fair quality were taken out at £5 5s.

GUM GUAIACUM.—3 barrels good block were bought in at 1s. 8d. per lb.

GUM KINO.—7 cases reddish, part rather dark Cochin, failed to find a buyer. Other 8 cases were taken out at 1s. 6d. per lb. Other 4 cases also failed to find a purchaser.

GUM MYRRH.—17 packages common dusty sorts failed to find a buyer. 17 bags fair sorts sold at 75s. per cwt.

HONEY.—10 barrels fair Jamaica sold at 17s. per cwt. Of other 67 packages only 3 cases and tins sold at 18s. per cwt. Of 46 cases Honolulu only 10 cases sold at 20s. per cwt. 70 cases Australian were taken out at 20s. 50 cases Australian were also all bought in.

IPECACUANHA.—44 bales Mattogrosso were taken out at 10s. 9d. per lb., only 1 bale of not at all desirable quality selling at 9s. 3d. per lb. Of other 20 bales Rio 5 bales had been sold prior to auction at 10s. 3d. per lb. 8 packages Carthagena were all bought in. Of other 22 packages only 2 bags sold at 4s. 8d. per lb., remainder being taken out at 5s. 3d.; other 7 bags at 6s.; other 15 bales at 5s. 3d. per lb.

IRISH MOSS.—2 bales failed to find a buyer.

JALAP.—10 bales fair heavy tubers were taken out at 7d. per lb.

KOLA NUTS.—40 bags, all more or less mouldy and wormy, failed to find a purchaser. Other 2 bags fair West Indian, but also slightly mouldy, fetched 2½d. per lb.

LIME JUICE.—1 puncheon was bought in at 1s. 2d. per gallon.

MUSK SKINS.—1 bag, nett 74 oz., was bought in. 1 tin ditto, nett 100oz., sold at 6d. per oz.

ORANGE PEEL.—3 cases and 3 casks were bought in.

PATCHOULI LEAVES.—5 bales were taken out at 1½d. per lb.

PUREE.—3 cases failed to find a purchaser.

QUILLAIA BARK.—50 bales were bought in at 16s. per cwt.

RHUBARB.—28 cases flat and round Canton were all bought in. Other 43 cases part sold at 5¼d. to 6½d. per lb. for rough coated rounds of fair colour, 9 cases flat selling without reserve at 6d. per lb.

SANDAL WOOD.—21 bags were bought in.

SARSAPARILLA.—4 serons Honduras were bought in. Of 4 bales native Jamaica 1 bale good red sold at 10d. per lb., and 2 bales greyish at 7d. per lb. Other 12 bales Jamaica were taken out at 1s. 6d. to 1s. 9d. per lb. 17 bales Lima at 1s. 6d. per lb.

SENNA.—90 bales Tinnivelly sold at 2¾d. downwards, according to quality and condition, 2 small lots of special quality realising the comparatively high price of 10d. per lb. Other 291 packages common practically all sold at 3½d. per lb. downwards. 5 packages Alexandrian were all bought in at 6½d. per lb. for stale part broken leaf. 1 bale Pods was not sold.

SQUILLS.—15 bags part sold at 2d. per lb.

TAMARINDS.—25 barrels very dark West Indian were taken out at 14s. per cwt.

WAX.—1 box fine Jamaica was taken out at £8 5s. per cwt. Other 6 barrels sold at £7 17s. 6d. to £8. Of 94 packages Zanzibar, 10 bags sold at £6 2s. 6d. 1 bale at £6 10s. Other 39 packages at £6 12s. 6d. to £6 15s. per cwt. 17 bags Australian were bought in at £7 to £7 2s. 6d. per cwt. Other 5 bags were also all bought in. 4 packages Cuban sold at £6 10s. per cwt. 33 cases White Calcutta were all bought in, as were 12 bags Grey Carnauba wax.

DIARY OF THE WEEK.

Monday, January 13.

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION, Church House, Church Street, at 8.30 p.m.—"Discussion on Federation Subjects. Compulsory Curriculum. Division of the Minor Apprenticeship Question."

Tuesday, January 14.

PHARMACEUTICAL SOCIETY, 17, Bloomsbury Square, London.—Library, etc., Committee.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION.—"Discussion on a Proposed Drug and Dispensing Price List."

HUDDERSFIELD AND DISTRICT CHEMISTS' ASSOCIATION.

ROYAL INSTITUTION, Albemarle Street, Piccadilly, W., at 3 p.m.—"The Cell; Its Means of Offence and Defence. Immunity." By Dr. Allan Macfadyen.

Wednesday, January 15.

CHEMISTS' BALL, Whitehall Rooms, Hôtel Mètropole.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION, 36, York Place, at 9.15 p.m.—Communications will be read by D. Harley and J. Hutcheon.

Thursday, January 16.

CHEMICAL SOCIETY, Burlington House, Piccadilly, W., at 8 p.m.—"Myricetin, Part II.," by A. G. Perkin; "The Colouring Matters of Green Ebony," by A. G. Perkin and S. H. C. Briggs; "An Investigation of the Radioactive Emanation Produced by Thorium Compounds, I.," by E. Rutherford and F. Soddy.

CHEMISTS' ASSISTANTS' ASSOCIATION, 73, Newman Street, W., at 8.30 p.m.—"Beekeeping," by S. T. Frost.

GLASGOW AND WEST OF SCOTLAND PHARMACEUTICAL ASSOCIATION, Cockburn Hotel, 141, Bath Street, at 8.30 p.m.—Social Evening.

LINNEAN SOCIETY OF LONDON, Burlington House, Piccadilly, W., at 8 p.m.—Paper on "The Use of Linnean Specific Names," by H. J. Groves. Exhibitions:—(1) Branches of Cherry affected by the Gnomonia Disease, with Remarks on its Effects and Climatic Causes," by A. O. Walker; (2) Photographs and Specimens of Heads of Wild Sheep to Illustrate a Recent Suggestion as to the Use of Large Horns in Feral Species," by J. E. Harting.

MIDLAND PHARMACEUTICAL ASSOCIATION Birmingham University, at 8.45.—"Cinchona Bark—Its Tincture and Assay," by F. H. Alcock.

Friday, January 17.

ROYAL INSTITUTION, Albemarle Street, Piccadilly, W., at 9 p.m.—"Interference of Sound," by Lord Rayleigh.

Saturday, January 18.

INTER-PHARMACY FOOTBALL LEAGUE.—Muter's College *v.* "Square."

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DEAR SIR, AMESBURY, SALISBURY, WILTS.

In reply to your letter asking my opinion of Antitoxine, I have much pleasure in saying that in Migraine and certain Neuralgias of the face I have found the drug almost a specific, and in every case there has never been any sign of cardiac depression, rather the reverse; a "feeling of warmth all over the body," as they have expressed after taking it. I always have it in my surgery, for use in the cases above-mentioned, having up to the present used several ounces of it. Just now I am exhibiting it in a patient with high fever from Acute Cystitis, and have every confidence that it will act as an antipyretic in conjunction with other drugs appropriate for this disease. You may make use of my name if you wish it, as I think the drug should be more popularly known by the Medical Profession.

I remain,
(Signed) Yours faithfully,
HENRY BROWNE, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A. Lond.

THE BRITISH ANTITOXINE MANUFACTURING CO.,
31, Snow Hill, London.

Notices to Correspondents.

ALL COMMUNICATIONS FOR THE 'PHARMACEUTICAL JOURNAL' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 5, Serle Street, Lincoln's Inn, London.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Alcock, Barnett, Bennett, Bibbings, Brown, Brunt, Cullwick, Dallinger, Gilmour, Greaves, Hebb, Hughes, Leaver, Loosmore, Lownsbrough, MacDonald, MacEwan, MacKinnon, Mitchell, Moore, Morgan, Newton, O'Halloran, Scott, Stokoe, Stubbs, Turner, Wardleworth, Wood.

PHARMACEUTICAL JOURNAL.

A Weekly Record of Pharmacy and Allied Sciences.

ESTABLISHED 1841.

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LONDON: SATURDAY, JANUARY 11, 1902.

THE COUNCIL MEETING.

When the minutes of the previous meeting had been read and confirmed, the President referred to the recent decease of Mr. Davenport, and after speaking of his early connection with the Society as one of its active working members in the various capacities of Vice-President, President, and examiner, as well as in connection with the passing of the 1868 Act, he moved that the Council should pass a resolution of condolence with his family (see page 25), recording also its appreciation of the services he rendered to British pharmacy. The motion was seconded by the Vice-President. Mr. Carteighe added that though Mr. Davenport was perhaps the last of those who held office as Councillors and examiners before 1868, he had the privilege of being associated with him, and could speak of him as a man of extreme amiability, a good classic, and an operative chemist who acquired a knowledge of science in order to apply it in his business. Mr. Martindale also referred to his association with Mr. Davenport as an examiner, and in other relations. Mr. Cooper spoke appreciatively of Mr. Davenport's kindness as an examiner, having been very serviceable to himself when under examination. Lastly Mr. Atkins endorsed the well-deserved eulogy expressed by previous speakers and gave some personal reminiscences of Mr. Davenport's courtesy and geniality.

The President mentioned that Mr. Corder was unable to be present, in consequence of the serious illness of his son, and that Mr. Harrison had also written to say that he was unable to be at the meeting.

The Secretary notified the receipt from the Privy Council Office of a copy of Dr. Balfour Marshall's report on the Society's examinations in Edinburgh, which appeared in last week's Journal (see *ante*, p. 8). He also reported the results of the recent examinations carried out there (see p. 28).

The President spoke of the report of the Government Visitor as being important in regard to the establishment of a compulsory course of systematic study, as well as in showing that it would be the means of saving candidates for qualification much of the worry and anxiety they sometimes experience under existing conditions.

The additions to the Society comprised 87 members and 43 student-associates. Several persons were restored to their former position in the Society, and others to the Register of Chemists and Druggists.

The report and recommendations of the Finance Committee were adopted without further comment than that of the President who, in moving their adoption, pointed out that in consequence of the cessation of fees for the Preliminary examination, the credit balance was less than at the end of last year, but that the reduction on that account has been lessened by the increased amount of the fee for the qualifying examination. Mention was made of a donation to the Benevolent Fund from the Junior Liverpool Association.

On the recommendation of the Benevolent Fund Committee ten grants, amounting in all to one hundred and thirty pounds, were ordered to be paid (see pp. 26 and 27).

The Secretary stated that the subscriptions to the Benevolent Fund during the past year have been about thirty pounds less than the amount contributed in 1900. He thought a better result might have been achieved, notwithstanding the unpropitious conditions prevailing, if pressure of routine work and the smallness of his staff had not partially prevented the issue of a specific request to every Divisional Secretary to canvass for the Fund; but he hoped in the coming year to be able to communicate with all his colleagues, and ask them to give the support which the Fund is urgently in need of at the present time.

The President expressed satisfaction that the Society's Benevolent Fund has not suffered so much as some other bodies of the kind have done.

The Vice-President, in moving the adoption of the report and recommendations, said he thought they might look forward to largely-increased subscriptions to meet the need of the Fund for money for the grants, which have now increased to as much as a thousand pounds in the year and had been the means of doing an immense amount of good. He hoped, therefore, the Society's Divisional Secretaries throughout the country would assist in that direction.

Mr. Atkins remarked that the work done by the Benevolent Fund is not sufficiently recognised by those who are not members of the Society, and he mentioned the case of chemists who have retired from business as one which should not prevent remembrance of those who have been less fortunate.

Dr. Symes pointed out that the appeal of the Vice-President was supported by the fact that the present payments on account of the Fund rather exceeded the amount of money that the Committee has to deal with, and the Secretary added that the deficiency was upwards of two hundred pounds.

A resolution was passed authorising the payment of annuities in the present year.

The report of the Library, etc., Committee, referring chiefly to administrative details, was adopted.

Mr. Gifford asked for information as to matters affecting the Society's Journal, and, in reply to the President's request that he should be more explicit, Mr. Gifford only said he believed the feeling to be general that the Journal would be better if it were brought more into line with modern ideas.

Several Divisional Secretaries were appointed (see p. 27), and, in referring to the vacancy at Cardiff, the President expressed regret that Mr. Sanders was not able to continue the good work he has done as Divisional Secretary.

Mr. John Edward Saul was appointed assistant examiner, to meet a difficulty that has arisen in regard to the examination now proceeding.

ANNOTATIONS.

The Report on the Dutch Cinchona Plantations in Java for the third quarter of 1901—a copy of which has been supplied by P. van Leersum, the director of the Government plantations—shows that there were 4,287,000 cinchona plants under cultivation, of which nearly three-fourths consisted of *C. ledgeriana*, the remainder being *C. succirubra* and *C. robusta*, the hybrid of *C. officinalis* and *C. succirubra*. The most noteworthy feature in the report is the remarkable character of the hybrid *C. robusta*, as shown by the analyses of fourteen different specimens. The total alkaloids in *C. robusta* varied from 9·6 to 15·87 per cent., the quinine from 2·21 to 7·51 per cent., the cinchonidine 2·63 to 8·46, and the cinchonine and amorphous alkaloid together from 0·99 to 5·58 per cent. The quinine expressed as quinine sulphate ranged from 2·68 to 9·25 per cent. A cinchona of this character, containing in one specimen nearly 16 per cent. total alkaloids, of which about one-third was quinine (as sulphate) speaks highly for the success of the scientific cultivation of cinchona as carried out in Java, and the fact gives occasion for thought why similar results could not be obtained in India by suitable scientific control.

The Unqualified Dispenser Question is still being discussed in the medical papers, and a correspondent of the *British Medical Journal*, who signs himself "Scrutator," has taken the trouble to repeat the old misleading statement that "only under very exceptional circumstances will the Pharmaceutical Society prosecute its own members." It would have been better to express the facts in a different way, and say that only in very exceptional circumstances does any member of the Pharmaceutical Society commit any offence which would justify the Council of that body in taking proceedings against him. But "Scrutator," preferring crooked ways, proceeds to insinuate that the Council does not take action against offending members because the latter contribute towards the Society's funds. The malicious character of the insinuation has been exposed promptly by the Society's solicitors in Edinburgh, who have written to the *B.M.J.* to give an emphatic denial to the statements in "Scrutator's" letter. Further "Scrutator" is invited to supply evidence which would justify the prosecution of any member of the Pharmaceutical Society, or any unqualified assistant employed by such, for a breach of the law, and Messrs. Morison and Son undertake, in return, that proceedings will be taken —in the interests of the public—against the offender.

Another Medical Practitioner, writing to the *Lancet*, under the style of "Vulneratus," is equally angry with the General Medical Council for attempting to maintain discipline and decency in the ranks of the profession. He is at a loss to know what is meant by "a medical hall or shop where scheduled poisons are sold to the public,' and asks whether the General Medical Council, in adopting that form of words, referred only to the sale of poisons in an unmixed state, or whether the words apply also to the dispensing of medicines containing scheduled poisons for a medical man's own patients? In reply, the editor of the *Lancet* does his best to reassure "Vulneratus," and advises the latter that he is at perfect liberty to sell or deliver such medicines to his patients, provided he labels them properly with his name and address. But how does the *Lancet* arrive at the conclusion that the Pharmacy Act, 1868, "forbids a medical man or anyone else not registered under the Pharmacy Act to keep a shop, and to supply scheduled poisons to anyone who asks for them other than on presentation of a prescription, duly signed by a qualified medical man"? Such an interpretation of the words of the Statute is interesting, but it is also somewhat inaccurate.

The Growing Drug Habit, or what is alleged to be such, continues to attract letters to the *Daily Mail*, but it is difficult to see what good purpose can be served by the publication of more or less fanciful statements with regard to the excessive use of certain toxic substances. One correspondent, who describes himself as "a chemist in a fashionable part of London," states that the extent of drug-taking to-day is simply appalling. Every day (*sic*) he gets numerous requests for morphine, cocaine, chloroform, and ether, and he knows that hundreds of society men and women carry the tiny syringe with them wherever they go; as they take numerous doses of their particular drug every day. Another would-be provider of horrors speaks of friends in the drug trade who have told her harrowing stories of eminent men who have "gone under," as the effect of using drugs to excess, and the *St. James's Gazette*, commenting on the correspondence, assumes that drug-taking in its various forms is to-day enormously on the increase, especially in society, though so much secrecy is used that the evidence of the chemists supplying the drugs is the only possible proof of the fact. But, assuming the facts to be as stated, what remedy would the newspaper alarmists propose? The *St. James's Gazette* appears to think that the only difficulty is to discover how the narcomaniac obtains his supply, and suggests that there is great laxity of the law on the subject, one chemist insisting on the poison book being signed and exhaustive particulars given before selling a small quantity of poison used in some simple photographic process, while another gives away enough to kill a family without a question. Such a statement can only be described as a gross exaggeration, and it is utterly untrue to assert, as the *St. James's Gazette* does, that "unless prevented by law, the chemist has, of course, a natural desire to sell as much poison—and anything else—as he can, especially if it is expensive." In conclusion, it is stated that "legislation must be particularly strict for the narcomaniac, whose craving is overpowering, his craft considerable, and his veracity nil," but it will tax the ingenuity of all the leader-writers in London to devise a Statute which will prevent the abuse of narcotics and other powerful drugs without interfering unduly with their application in a proper manner.

Formalin as a Disinfectant for the Hands appears to possess certain disadvantages, being stated by the *Medical Press* to have been used with somewhat disastrous results by an American surgeon. After the formalin solution had been used for the purpose mentioned for about a month, great inflammation appeared at the end of all his fingers, involving the nails. The inflammation was so violent that serum collected under the nails, separating them from the underlying tissue, and it seemed for a time as though all the nails would be exfoliated. Under the influence of rest, together with an ointment of ichthyol, the inflammation subsided. As a consequence, however, the nails separated on an average for about one-third of their length from the distal extremity, but gradually returned to the normal condition. The production of the inflammation is attributed by the sufferer to the use of formalin solution and its prolonged contact with the finger ends in consequence of his wearing rubber gloves.

The Elementary Nature of Argon is doubted by G. Martin, who has recently communicated a paper on the subject to the *Chemical Society*. He points out that some eighty distinct elementary substances are now recognised, which are assumed to be composed of different kinds of matter because each one has chemical properties peculiar to itself alone. Physical properties, he contends, are of little value in deciding whether different substances are merely allotropic modifications of one kind of elementary matter, or whether they are distinct elements, the only certain test lying in the chemical nature of the compounds produced when the elements unite with other elements. Certain elements resemble each other so strongly in their physical nature that it is almost impossible to distinguish between them, but such substances have one characteristic which stamps them as elements—each produces its own peculiar set of compounds. That characteristic, however, is absent from argon and its companions; therefore, in order to demonstrate their elementary nature, Ramsay had to fall back on their physical properties—properties which stamp the new gases as a distinct class of elements but do not prove that each so-called "element" is a single substance and not a group of closely related elements. It is pointed out, for instance, that if argon were a mixture of three monatomic gases of like nature, and of which the atomic weights differed from each other by a fraction of a unit—as do those of nickel and cobalt—it would be impossible to distinguish the mixture from an element, as it would answer to exactly the same physical tests and could not be resolved into its compounds by any physical method except with the utmost difficulty. It takes many thousands of fractionations to distinguish between two rare earths, which not only give different chemical compounds, but are far more unlike chemically than would be three monatomic inert gases. In conclusion, the author refers to the fact that, in the eighth group of the periodic table occur neighbouring elements of almost identical atomic weight and properties, and he suggests that, if each of Ramsay's so-called "elements" really consisted of three allied substances, the eighth group would lose altogether its peculiar "triad" character and split up into three distinct groups—a possibility which of late years has been running through many minds.

A Laboratory Report, issued by Messrs. Southall Bros., and Barclay, of Birmingham, is of special interest as showing what steady work is being carried on in the analytical laboratories of that firm. The report includes a large number of practical notes on crude drugs, fixed and volatile oils, galenicals, etc.; it is also stated in the preface that, "undeterred by the grudging appreciation with which standardisation of pharmaceutical preparations is received by a certain section of pharmacists," the workers in those laboratories are pushing on with their efforts towards obtaining uniformity in galenicals, and this year they publish a series of suggested standards for concentrated infusions, as given in the following list:—

Name of Concentrated Infusion.	Percentage of total extractive matter.	Name of Concentrated Infusion.	Percentage of total extractive matter.
Aurantii	10·2	Gentianæ Co.	6·00
Aurantii Co.	7·2	Krameriæ	4·0
Buchu	6·0	Quassiæ	0·25
Calumbæ	3·5	Rhei	10·0
Cascarillæ	2·0	Scoparii	15·0
Carophylli	5·0	Senegæ	10·00
Chirettæ	4·5	Sennæ	14·00
Cuspariæ	8·00	Serpentariæ	4·50
Digitalis	1·60	Uvæ Ursi	10·00

Correspondence is invited by the firm with regard to the above figures.

The Name Opodeldoc, concerning which a reader of the *P.J.* has written to the Editor this week, is usually considered to be a synonym for liniment of soap, and it is given as such in Gray's 'Supplement to the Pharmacopœia.' But in the scale of medicines and medical stores for merchant ships, issued by the Board of Trade, the name "opodeldoc" is applied to Linimentum Opii, B.P. A very old formula for opodeldoc, in the Edinburgh Pharmacopœia ordered Spanish soap, 1 lb., camphor, 2 ozs., and the essential oils of rosemary and origanum, each ½ oz., to be dissolved in rectified spirit of wine, 4 pints. The product was a thick, opaque liniment, while other kinds of opodeldoc, usually proprietary articles, are solid preparations; but there should be no question among chemists and druggists as to what should be supplied when opodeldoc is prescribed or asked for in the ordinary course, custom having long sanctioned the application of the term to ordinary liniment of soap.

A Practical Step in the direction of professional reciprocity has been taken in connection with the admission of medical men to the Transvaal Colony, a proclamation having been issued which contains a clause preventing the issue of licences to applicants holding foreign diplomas, unless the laws of the country in which the diploma is conferred grant equivalent privileges to qualified British practitioners.

A New Process for Maturing Whisky has been devised by Professor J. T. Hewitt, of the East London Technical College, who read a paper on the subject before the Society of Chemical Industry on Monday, January 6. He pointed out that the badness of new whisky is due to the presence of certain aldehydes which, together, are known as fusel oil. As far back as 1881, Sir Thomas Lauder Brunton told the Spirit Commission that the most dangerous of those substances was furfural. The ordinary method of eliminating those poisonous aldehydes is the long and costly process of storing the whisky in casks for several years, preferably in casks that have contained sherry. That process, however, has its drawbacks, a good deal of the alcohol being lost, and there is also of necessity a loss of interest on the capital laid out whilst the whisky is maturing during several years. Economic considerations also enter into the problem, for this maturing process adds considerably to the cost of the whisky by the time it has reached the consumer. The irresistible conclusion, therefore, is that the lower the price of whisky the more poison it contains. Innumerable attempts have been made to hasten the process of maturation, both out of consideration for the public health and in the interests of the manufacturer. From both points of view it is extremely desirable that some effective means should be discovered of ridding whisky of its poisonous constituents quickly, and in such a fashion that even the cheapest whisky may not produce the results which the consumption of unmatured whisky undoubtedly entails. That result Professor Hewitt thinks he has attained by adding to the "pot-still" substances which combine with the noxious aldehydes and thus enable the whisky to distil over quite pure. By thus removing the aldehydes from the spirit, Professor Hewitt contends that freshly manufactured whisky can be converted, in a few months at most, into a fine, mature, and wholesome drink. Samples of whisky which have been treated by Professor Hewitt's process are described as being without the colour associated with most blends of the spirit, but the question suggests itself whether the development of the peculiar flavour of good whisky may not also be affected by the process. It is not difficult to prepare ethyl alcohol free from aldehydes, but such pure alcohol would not commend itself as a beverage to most people who drink whisky.

The Thirty-Sixth Chemists' Ball will be held in the Whitehall Rooms, Hôtel Métropole, London, on Wednesday next, January 15, and applications for tickets (lady's, 12s. 6d.; gentleman's, 17s. 6d.; including refreshments, supper, and wine), should not be longer delayed. All such applications should be accompanied by remittances, and addressed to the Hon. Secretary, Mr. Ernest W. Hill, 160, Earl's Court Road, South Kensington, S.W.

REVIEWS AND NOTICES OF BOOKS.

'Die Rohstoffe des Pflanzenreiches.' By Dr. Julius Wiesner. Part 7. Pp. 160. Price 5 marks. Leipzig: Wilhelm Engelmann. 1901.

This part of Professor Wiesner's valuable work deals with the fibres, the discussion of which, however, extends beyond the 160 pages of which the part consists. Although not of so much direct interest to the pharmacist as some of the preceding sections of the book have been, yet the importance of the subject is beyond dispute. The establishment of the identity, or otherwise, of fragments of cloth, or of paper, may yield evidence of the highest forensic value. The determination also of the composition of various fabrics, cords, etc., is often of great commercial value as a means of detecting the fraudulent substitution of an inferior for a superior fibre. Such information can be obtained practically by the use of the microscope alone, and the study of the fibres of which such materials may consist thus acquires a high degree of importance. In Part 7, now under consideration, the structural, physical, and chemical characters, etc., of fibres generally are discussed, and, after a lengthy enumeration of commercial fibres, with their botanical sources, the more important of them are treated in detail. Cotton, for instance, occupies thirty-one pages, flax, fourteen, and so on. The work appears to be well brought up to date, and cannot fail to be most useful to all who have to undertake investigations of this nature.

'A Manual of Botany.' By J. Reynolds Green, Sc.D., F.R.S., F.L.S. Vol. II. Second edition. Pp. 515. Price 10s. London: J. and A. Churchill. 1902.

In preparing this edition for the press, Professor Green has entirely rewritten the section in which the Spermaphyta or Phanerogamia are dealt with, his object being to make that part of the book more readable and more useful to the student of the British Flora. The Natural Orders which are represented in the United Kingdom are treated more fully than in the first edition and many points of difficulty in the morphology of flowers are discussed. The changes thus effected cannot be regarded as other than an improvement, and students will also welcome the extension of the chapter on systems of classification. The author is to be congratulated on having now completed his text-book in accordance with his own ideas, all resemblance to Bentley's 'Manual,' on which Professor Green's work was originally based, having disappeared.

'Photographing at Night.' No. 31 of the *Photo-Miniature*. Edited by John A. Tennant. Pp. 342. Price 6d. London: Dawbarn and Ward, Limited. 1901.

The title of this booklet seems to present a decided contradiction, but photography at night is not an impossibility, since more or less actinic or radiant energy is manifested during every hour of the night in ordinary clear weather, the moon, stars, and artificial lights on the earth leaving but little real darkness anywhere outdoors. In this number of the *Photo-Miniature*, the reader is told what to photograph and how to proceed, a number of beautifully printed plates being given as examples of what may be done at night.

'Hints for School Gardens.' By William G. Freeman, F.L.S. Pp. 25. Barbados: Imperial Department of Agriculture. 1901.

This is one of the useful "Pamphlet Series" published by the Imperial Department of Agriculture, and is apparently intended as a supplement to the pamphlet on "Nature Teaching," which was referred to in the last volume of the *P.J.* Attention is directed in the first place to box and pot cultivation, detailed instructions being given on all necessary points. The garden is next dealt with, while subsequent sections treat of the propagation of plants and manuring. It would be well if this and other pamphlets in the series could be brought into extended use in this country. Copies can doubtless be obtained through Messrs. Dulau and Co., Soho Square, London.

PHARMACEUTICAL SOCIETY OF IRELAND.

On Wednesday, January 1, the monthly meeting of the Council of this Society was held at 67, Lower Mount Street, Dublin, at three o'clock. The President, Mr. George Beggs, occupied the chair, and the other members of Council who attended were the Vice-President, Mr. Bernard, and Messrs. Grindley, Hon. Treasurer; Smith; Baxter, J.P. (Coleraine), T. N. Moffitt (Belfast), Batt, and Kelly.

The President said that as that was the first meeting in the New Year, he desired before beginning the business to wish them all "Happiness and Prosperity."

The Visitor's Report.

The Registrar, Mr. Ferrall, then read the following report of the Lord Lieutenant's Visitor, Sir George Duffey, M.D., on the Society's examinations held during the year:—

Preliminary.

"This examination was held, as usual, quarterly. 94 candidates—an increase of 12 over the number of 1900—presented themselves for examination during the year. 49—52·1 per cent.—passed and 45—47·8 per cent.—were rejected. Last year the percentage of rejections was 36·5. The high rate of rejections during the present year has been exceeded only once previously, viz., in 1899, when it was 48·1 per cent. The subject in which the largest number of candidates failed was arithmetic; 38 of the 45 rejected candidates failed in this subject, 13 of the 38 showing such ignorance of it as to be marked 0. 15 candidates failed in weights and measures; 15 also in chemistry; 13 in English; 13 in Latin; 9 in Euclid; 7 in algebra; and 6 in one or other of the optional subjects. 9 of the 15 candidates who failed in chemistry were marked 0. Of the 45 rejected candidates 13 failed in one subject only, viz., 8 in arithmetic; 3 in Latin; 1 in English; and 1 in chemistry. 11 failed in 2 subjects; 12 in 3; 5 in 4; 1 in 5; 2 in 6; and 1 in 7. As regards the optional subjects, 49 candidates (of whom one-third only obtained the bare pass mark, *i.e.*, 20 per cent.) took botany; 39 selected French; and 6 physics. It is gratifying to notice that there was some improvement in the knowledge of French shown by the candidates. The examination in that language, as conducted by the present examiner, includes a written as well as an oral examination, and is a more satisfactory test than it formerly was. Of the 94 candidates examined during the year 27 were cases of re-examination; 19 were examined for the second time; 11 passed and 8 again failed. Of 5 examined for the third time, 3 passed and 2 failed. Of 2 for the fourth time, 1 passed and the other was rejected; and one candidate re-examined for the fifth time was again rejected. Thus, of the 27 candidates re-examined, 15 passed and 12 did not. The Preliminary Examinations during the year have been ably conducted by Mr. James Healy, LL.D., R.U.I., and Mr. David O'Sullivan, both of whom came into office at the January examination. The former gentleman examines in English, Euclid, arithmetic, and in French; and the latter takes the other subjects. The questions on the examination papers, which I enclose, appear to be fair and reasonable, and applicable to the age of the candidates and the training they should necessarily have received to enable them to profit by the special instruction preparatory to their final examination. The oral examinations were also practical and simple; and the marking for both the written and oral by no means stringent. The results of the year's examination, as given above, show, however, that the standard of preliminary general education of a large number of the candidates is lamentably low. In my last report I again called attention to the system of marking in Latin and in English; and offered some suggestions with a view to an improvement in the examination. No change, however, as far as I know, has been made in the Preliminary Examination with regard to the matters referred to, which therefore I beg respectfully to bring again under your Excellency's notice. I am strongly of opinion that the hours of examination require revision. The examination at present occupies one day only. It commences at 11 a.m. and, with a brief interval of about three-quarters of an hour in the afternoon, is seldom concluded until after 7 p.m. These long hours are a strain upon the examiners and upon the candidates. Owing to the number of subjects and the number of candidates the time available for the written and for the oral examination is insufficient, and the candidates are also frequently interrupted when at their written examination by being called up to an oral examination. The average time given to an oral examination is but five minutes, and for each written examination one hour only is allowed. In addition to dictation, the candidates have to write answers to examination papers in seven different subjects. The examination should extend over two days, and more time should be allotted to the written as well as to the oral examinations, and both examinations should not be held concurrently.

The License Examination.

"Sixty-nine candidates—an increase of 2 over the number in 1900—presented themselves for this examination during the year. 40—58 per cent.—passed, and 29—42 per cent.—were rejected. Last year the corresponding percentages were: Passed, 38·8 per cent.; rejected, 61·2. The figures for this year show a considerable improvement in the results of this examination, and the percentage of successful candidates is higher than it has been since 1893. 34—or almost one-half—of the 69 candidates had been unsuccessful at previous examinations. 21, of whom 15 passed, were examined for the second time; 4, of whom 1 passed, for the third time; 5, of whom 2 passed, for the fourth time; 3, of whom 1 passed, for the fifth time; and 1, again rejected, for the sixth time. Of the 29 rejected candidates, 20 failed in theoretical chemistry; 2 candidates only—who also failed in theoretical chemistry—did not obtain the minimum pass standard in practical chemistry. Similar results, indicative of a want of systematic instruction in the theory of chemical science, have been noted in former reports. The question of the addition to the Regulations for the License Examinations of compulsory attendance upon a course of lectures in theoretical chemistry in a recognised school of chemistry is, I understand, under consideration by the Council of the Society. Some such resolution would, in my opinion, be advisable. In the division of pharmacy 21 of the 29 rejected candidates failed—the majority, 12, in "compounding." An alteration which came into force at the April examination has been made in the marking in this division. The minimum total pass percentage has been raised to 50, instead of 45, and the former sub-division, "Prescription Reading and British Pharmacopœia," has been divided into two distinct sub-divisions, with a maximum of 20 and a minimum of 10 for each. The minimum pass percentage for compounding and for the written examination has also been raised to 50 per cent. for each subdivision respectively. In the division of botany and materia medica 11 failed in the former and 8 in the latter; 7 of the 11 failed in both subjects. The following is an analysis of the rejections arranged according to the three divisions of the subjects of this examination:—Division 1, botany and materia medica; Division 2, chemistry; Division 3, pharmacy. Rejections in Division 1, only 1; rejections in Division 2, 4; rejections in Division 3, 6; rejections in Divisions 1 and 2, 3; rejections in Divisions 1 and 3, 2; rejectons in Divisions 2 and 3, 7; rejections in Divisions 1, 2, and 3, 6; total rejections, 29. In my report for 1899 I recommended that at the examination in botany and materia medica candidates should be tested as to their knowledge of the use of the microscope. I am pleased to state that at the April examination, for the first time, slides with sections typical of various forms of plant structure were given to the candidates to recognise under the microscope.—I have the honour, etc., George F. Duffey, M.D., Visitor."

The **President** said the lamentable standard of the Preliminary Examination could hardly be laid to the door of the Council. They had invariably endeavoured to make it as searching as possible. He fully agreed with Sir George Duffey that it should be extended over two days. He had attended the last fourteen or fifteen of these examinations, and had invariably found that each of them was more or less of a rush. An examination extending over two days would not be a hardship on the examiners, whilst it would be a great benefit to the students.

The **Vice-President** moved that Sir George Duffey's report be sent to the examiners for their remarks, and that it should then go to the Law Committee. It was quite true that the procedure at the Preliminary Examinations required to be altered. He had been present at a good many of them, and he thought that no boy was fit to leave school who would not be fit to pass it. It was only fixed at the ordinary standard of school education. Another matter requiring consideration was the oral examination for the License. It took place in the presence of students who were writing, but in a whispered conversation, which members of the Council and licentiates, who were supposed to be present, could hardly hear. He had never been able to catch more than one or two of the questions. The examiners should speak loud, so that those present who had a right to hear could hear.

Mr. **Kelly**, in seconding the motion, said the number of subjects the candidates had to answer in at the Preliminary Examination was too great. Numerous candidates who failed to pass the Society's Preliminary went to the College of Surgeons and passed at the first attempt. Their examination should be at the same standard as that of the College of Surgeons; but the Society's examination exceeded that of the College in many points, and was much more searching.

The **President** said even if the College of Surgeons' standard was not as high as the Society's, he did not see why the latter should be lowered.

Mr. **Smith** said he had spoken to a number of members on the subject of the Preliminary Examination, and in his opinion the number of subjects was too great. He did not know that chemistry was to be regarded as a part of general education. If the standard were kept up in English, arithmetic, Latin, and perhaps French, and chemistry and botany were dropped at the Preliminary, that would not be a lowering of its standard. It would also enable boys to come direct from school to the examination, which at present they could not do. They would have to pass in the other subjects at the License Examination. The present system was not conducive to the obtaining of apprentices, and that was a matter that should be considered.

Mr. Kelly said he had not the remotest thought of lowering the standard of examination.

Mr. Baxter said he sympathised with the views of Mr. Kelly, but at the same time he thought that if chemistry and botany were eliminated from the Preliminary a door would be opened to young men who had no intention of becoming pharmaceutical chemists, and the standard of the examination would at the same time be lowered. He concurred with the opinion that the examination in question should be spread over two days.

The Vice-President said Sir George Duffey was quite right in his statement that the standard of the English education of the students was lamentably low. It ought to be no trouble to a boy in these times to gain a knowledge of theoretical chemistry when there were so many technical schools.

After further conversation the motion of the Vice-President was unanimously agreed to.

Correspondence.

A letter was received from Mrs. Porter returning thanks to the Council for their letter of condolence on the occasion of the death of her husband, late member of the Council.

A letter was also received from Mr. W. V. Johnston resigning the office of Examiner for the Pharmaceutical Assistantship qualification, and offering himself for election as a member of Council. The resignation was accepted.

New Regulation.

On the motion of Mr. Smith, seconded by Mr. Kelly, the following new Regulation was adopted and ordered to be transmitted to the Privy Council for approval:—"That on and after January 1, 1903, all candidates for the License must produce evidence of having attended a course of elementary chemistry extending over a period of three months, such course to consist of at least three hour lectures per week, in a school recognised by the Council; that the students must attend at least three-fourths of the lectures; and that the course shall be taken out before that in practical chemistry."

On the motion of the President, seconded by the Vice-President, Mr. A. T. Bennett, Bagnalstown, Ireland; Mr. J. McMurray, Belfast, and Mr. F. C. Warren, Geashill, King's County, Ireland, were elected members of the Society.

The Council then adjourned.

MIDLAND PHARMACEUTICAL ASSOCIATION

One of the pleasant "ladies nights" promoted by the Midland Pharmaceutical Association was held on Tuesday evening at the Great Western Hotel. The gathering—a large one—included:—Mr. J. Barclay (the President), Messrs. A. W. Gerrard, and F. H. Alcock (Vice-President), Dr. Vinrace, Messrs. G. H. Brent (Hon. Secretary), G. E. Perry, J. Poole, W. M. Freeman, C. Thompson, H. Boucher, A. Harries, J. C. Cattell, T. Cattell, F. Gibson, C. F. Jarvis, H. Jessop, etc. The programme was delightfully varied, comprising, as it did, songs, grave and gay, recitations, sleight of hand performances, instrumental selections and recitations.

LONDON CHEMISTS' ASSOCIATION.

A meeting of the Committee which has in hand the formation of this Association, was held at the Holborn Viaduct Hotel on Wednesday, January 8. There was a full attendance of the members, and three of the new members who have been added to the Committee were present—Messrs. Breese, Goodall, and Truman. A list of rules was submitted, and finally drafted for joint consideration with a Committee of the Western Chemists' Association, and subsequent submission to a general meeting of chemists, who wish to join the Association. That meeting will be called for January 29.

MANCHESTER PHARMACEUTICAL ASSOCIATION.

The fourth meeting of the session was held at the Victoria Hotel, on Wednesday, January 8, Mr. G. S. Woolley, the President, occupied the chair.—Mr. J. Grier, of the Pharmaceutical Department of the Owens College, was present to read the announced paper on

Pharmaceutical Education,

but owing to the limited number of members present, the Chairman moved, Mr. Kirkby seconded, and it was resolved: "That owing to the smallness of the attendance, the reading of Mr. Grier's paper on "Pharmaceutical Education" be postponed, and that the Council be requested to convene a special meeting of the Association for the purpose of hearing Mr. Grier's paper, and for discussing the same, and at the same time considering a circular received from the Federation of Local Pharmaceutical Associations on the same subject." There was a good deal of talk among the half-dozen gentlemen present before the resolution was submitted by the meeting.—The Chairman said, whether it was due to the Christmas holidays or whether it was owing to the meetings being held at an inconvenient hour he did not know, but he thought the existing state of things would have to be altered in some way or other. The subject of pharmaceutical education was an important one, and so was education generally. One thing which struck him very forcibly at the present time was that the education most needed was reading, writing, and arithmetic. If they advertised for a boy now-a-days he could scarcely write a decent hand, and to ask a boy how much three-quarters of a dozen articles amount to at 12s. a dozen was to put him at a loss for an answer.—Mr. Kirkby gave instances of the neglect of the primary forms of education for higher subjects, such as Greek and the higher mathematics, which was proving disadvantageous in many respects.—The question of providing refreshments at future meetings was suggested as a draw, and afternoon meetings were once more mentioned.

COMMERCIAL INTELLIGENCE.*

The Manufacture of Calcium Carbide was started on a considerable scale in Norway, but the industry, Vice-Consul Franklin (Skiensfjord) states, like many others, is suffering under the evils of over-production. In consequence of the crisis thus produced, the German, Swiss, Austro-Hungarian, Swedish and Norwegian carbide manufacturers have made an agreement, which, it is said, nearly every maker of importance has signed, whereby they have bound themselves to restrict the output. The united production has been about 50,000 tons yearly, and as the consumption up to the present is stated to have only reached 12,500 tons, the position may be easily understood. In France, Italy and other countries where the agreement referred to has not been signed, the consumption of calcium carbide is less than the production, consequently it has been impossible to maintain prices.

The Import of Sodium Carbonate into Italy, Vice-Consul Carmichael (Leghorn) states, is steadily on the increase. With the expansion of the manufacture of Italian piece-goods, an ever-increasing quantity of sodium carbonate is required for bleaching, and in 1900 the largest quantity of any year in the past decade was imported, viz., 69,819 cwts. Of this total, only 25 per cent. was from British sources, and it would certainly seem, remarks Mr. Carmichael, as if British dealers ought to secure a larger proportion. Of course, he states, competition is keen and prices have been cut very low, which is naturally an obstacle to all British articles of superior manufacture.

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* From Consular Reports and other official sources.

The Italian Trade in Copper Sulphate, though of considerable volume, is reported to be somewhat spoilt by the keenness of the competition. The average import in the years 1891-95 was 1,138 tons. In 1897 the United Kingdom was represented by 89 per cent. of the import trade in copper sulphate, and in 1898 by 96 per cent., while in 1899 the percentage dropped to 76, and in 1900 the proportion from the United Kingdom was only 67 per cent. The decline is solely attributed to the success of the United States competition. British shippers are said to have been handicapped by high freights, but this, it is thought, is not sufficient to account for the fact that the United States shippers have been able to offer an exactly similar article at 28s. c.i.f. per ton less than their British competitors. One point, Vice-Consul Carmichael thinks, is of real importance to the trade, and should never be lost sight of by shippers, viz., that all barrels should be of hard wood and iron-hooped. These barrels have a great attraction for the Tuscan peasant, who sells them as "empties" at a good figure, and it is said to be not unlikely that one of the reasons why Italian sulphate has not found greater favour is that, not having to undergo a sea voyage, it is supplied in bags which will fetch little or nothing.

"The Famous Boric Acid of Tuscany," Mr. Carmichael reports, has now formidable competitors in the borates of of California, South America, and Persia, but notwithstanding this, the trade in that article is not unsteady, and is still very considerable, the average quantity exported during the years 1891-99 being 1,748 tons, valued at £35,118. Only about 30 per cent. of the Tuscan native acid is now shipped to the United Kingdom, but the locally-manufactured borax appears to be highly appreciated, for quite four-fifths of it is exported to the United Kingdom. It is thought that Tuscan boric acid being in a free state, and associated with valuable salts of ammonia and magnesia, can hold its own in the matter of quality against "boracite," South American borate, or Californian colemanite.

The Output of Tuscan Mercury during 1900 is reported to have been considerable, owing to the operations of the "Società del Monte Amiata," a company formed in 1897 to work a new discovery of cinnabar at Abbadia San Salvatore in the province of Grosseto. There are only two other mines in Italy, both in the province of Grosseto, the well-known mine of the firm of Rosselli at Siele, and the Schwarzenberg mine at Cornacchio; both these mines produced their normal output in 1900. Tuscan mercury is of a very pure quality, and locally is said to be in every respect equal to mercury of Almaden. Yet on the London market the Spanish article enjoys the greater favour, and realises from 2s. to 2s. 6d. per flask of 75 lbs. more than Tuscan cinnabar. If the contention locally made is correct, Vice-Consul Carmichael thinks there is no valid reason for the difference in price. When the industry was first developed in Tuscany, lack of experience no doubt left something to be desired in the mineral produced, but in the course of time the mines have been fitted with the latest mechanical and metallurgical appliances, and have the advantage of the ablest technical supervision. Perhaps, he remarks, the question as between Spanish and Tuscan mercury needs to be looked into a little more closely on the London market. Be the case what it may, about 95 per cent. of the Tuscan cinnabar is taken by Great Britain.

British Trade with Switzerland.—Sir Conyngham Greene, in transmitting a supplementary report received from Mr. J. C. Milligan, British Commercial Agent at Zurich, on the trade of Switzerland, in 1900, directs attention to the desirability of a more effectual cultivation of the Swiss trade by British commercial travellers, pointing out the disproportion between British exports to and imports from the Confederation. He shows that although the United Kingdom is by far the best customer which Switzerland possesses for her manufactured goods, yet the balance of trade is very much against the United Kingdom; for, whereas we spent £6,948,000 on Swiss manufactured goods in 1900, we only received from her in return £1,843,000 for the goods exported to Switzerland. In regard to druggists' sundries and chemicals, the total imports amounted to £1,236,000 in 1900, of which the imports from the United Kingdom were valued at £50,700, a decrease on the previous year of £3,800, while the imports of drugs and chemicals from Germany, France, and Belgium, all show a substantial increase. The total value of colouring materials imported was £299,000, the imports from the United Kingdom being valued at £11,000, a decrease of £6,000, the decrease being in varnishes £3,600, and various colours £2,200. Indiarubber and gutta-percha goods imported amounted to £123,000, the imports from the United Kingdom being given as £25,500, a decrease of £2,800. Mr. Milligan points out that British manufacturers could increase their trade in Switzerland, without involving any considerable outlay, by appointing agents of Swiss nationality to represent them, and he also points out that, with the exception of wine and milk, Switzerland has practically no natural products for industrial purposes, and is therefore obliged to import the raw materials to enable her to carry on her numerous industries, consequently it is worth while to cultivate her trade.

RECENT PATENTS.[*]

To Render Phenols Soluble in Water.

After the eminent disinfecting properties of the cresols had been discovered attempts were made to utilise them extensively, but their low solubility has hitherto been an obstacle to their more general application. The saponaceous preparations of cresol are open to the objection that the presence of lime in the water used to dilute them results in the precipitation of the soap and separation of the cresol. It has been discovered, however, that the salts of the sulpho acids, and especially of the disulpho acids of the substances accompanying the anthracene in tar oil possess the property, when in aqueous solution, of absorbing cresols (and generally cresols in the widest sense) very freely, and that the clear solutions thus obtained are easily miscible with any quantity of water without forming any deposit. Among the distillates accompanying the anthracene phenanthrene pre-eminently possesses this property of yielding sulpho-acids which render cresols soluble, but this property is shared, although in a less degree, by the other substances belonging to this group, so that a rather crude commercial phenanthrene may be used for this purpose. (Aktiengesellschaft für Theer-und Erdöl-Industrie, Flottwellstrasse, 7 Berlin, Germany, through Jasper Wetter, 37 and 39, Essex Street, Strand, W.C.; No. 7,719 of 1901.)

Medicinal Preparation for the Treatment of Malaria and other Fevers.

For the treatment of malarial and other fevers the following mixture has been patented:—Rectified spirit (200° proof); Hollands gin (100° proof), and Jamaica rum (100° proof), of each equal parts to make one quart, to which are to be added the following ingredients:—Extract of Oregon grape root, 12 drachms (avoir.); aloes, 18 drachms; sulphur, 30 drachms. The mixture is administered to adults without dilution in quantities not exceeding one teaspoonful *per diem* for three days, and thereafter on every alternate day if necessary. For infants dilution with 75 per cent. of water is necessary. (H. C. C. Hinze, 64, Bree Street, Cape Town, Cape Colony, through J. E. Evans-Jackson and Co., No. 7,346 of 1901.)

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[*] Abstracted from the *Illustrated Official Journal* (*Patents*) and from specifications furnished by the Patent Office. A copy of any original specification can be obtained from the Comptroller-General, Patent Office, 25, Southampton Buildings, Chancery Lane, W.C., by sending 8d. in stamps, or a Patents Form, C1 (which can be obtained at the principal Post Offices at the same price) and stating the number and year of the required specification.

MANUFACTURE OF PEPTONE

By this process a peptone is obtained which is free from ash, albumoses, and other products of digestive action *e.g.*, leucin. It has the pronounced character of an acid, and is not deliquescent. The bulk of the albumoses are removed by salting out with ammonium or zinc sulphate in neutral alkaline or acid solution, as hitherto practised. There still remains a quantity of albumoses, which may be removed by precipitation with a ferric salt in strongly acid solution. The albumose free filtrate is made only feebly acid and an iron salt—*e.g.*, iron-ammonia-alum, added. This precipitate is filtered off from the solution in which the hexone bases remain dissolved, and is washed with a saturated solution of the original albumose precipitant—*e.g.*, ammonium sulphate. The peptone-iron salt is treated with lime or baryta, the lime or baryta removed by sulphuric or carbonic acid, and the solution concentrated *in vacuo* to a syrup and precipitated by alcohol. (Chemische Fabrik von Heyden, Aktiengesellschaft, Radebeul, near Dresden, Germany, through Mewburn and Ellis, 55, 56, Chancery Lane, London, W.C.; No. 15,172 of 1900.)

CHEMICALLY PURE HYDROCHLORIC ACID.

A cheap process has been invented for the conversion of crude hydrochloric acid, freed from arsenic by one of the known methods, into pure distilled acid of the same strength as the crude acid, at a cost of about sixpence per 100 kilogrammes. The process chiefly consists in causing crude hydrochloric acid previously freed from arsenic to flow continuously into a bath of hot diluted sulphuric acid, the dilution of which is regulated so that its boiling point lies but little above that of the hydrochloric acid, the quantity of crude hydrochloric acid thus supplied corresponding to that of the pure acid which distils off. The hydrochloric acid obtained continuously by distillation according to this process has the same strength as the crude acid flowing into the still. The steam heating coils and receptacles are made of lead, which metal is especially suitable, as a film of lead chloride is soon formed, and protects the metal from further corrosion. Hitherto chemically pure hydrochloric acid, especially that free from iron and sulphuric acid, has been prepared by decomposing pure sodium chloride with pure sulphuric acid, or by distilling crude hydrochloric acid out of glass receptacles, or, in the case of large quantities, by driving the hydrochloric acid gas out of the crude acid after it has been deprived of arsenic by means of concentrated sulphuric acid. These methods have respectively the disadvantages that pure materials are expensive, glass vessels are unsuitable for working on a large scale, and, in the last method, the use of delicate earthenware vessels and the dilution of large quantities of sulphuric acid are obvious defects. The present process overcomes all these disadvantages. (E. de Haen, List, near Hanover, Germany, through Jasper Wetter, 37 and 39, Essex Street, Strand, London; No. 10,196, of 1900.)

TONIC PREPARATION FOR THE HAIR.

This invention relates to a new preparation to be used as a dressing for the hair with the objects of inducing a rapid growth by producing a healthy circulation in the scalp, freeing the same from dandruff and other diseases, and generally strengthening the growth of the hair. The ingredients are:—Sesame oil, 96 oz.; cinchona bark, 4 oz.; powdered rock sulphur, 6 oz.; ferrous sulphate, 1 oz.; chiretta sticks, one handful. These are boiled together to the consistence of treacle, half a gallon of which is mixed with about two gallons of eucalyptus oil; oil of rosemary, two gallons; oil of lavender, half a gallon; and oil of verbena, 4 oz. The boiling of the preparation as described brings about a chemical change, the introduction of the sulphur causing the resulting liquid to become reddish in colour. (A. H. Spry, Bankcroft, Douglas Road, Harpenden, Herts; through S. T. Hyde, 1, Broad Street Buildings, Liverpool Street, London, E.C.; No. 10,699 of 1901.)

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

LIME WATER.

At Worship Street Police Court, on Thursday, January 2, William Fairs, described as a chemist and dentist, of Old Ford Road, Bow, E. [The name William Fairs does not appear in the Register of Chemists and Druggists, 1901.—ED., *P.J.*], was summoned for selling lime water not of the nature, substance, and quality demanded, being certified by the Borough Analyst to be deficient in lime to the extent of 20 per cent., and to have been prepared with ordinary water instead of distilled water, as required by the British Pharmacopœia.—Mr. G. H. Young prosecuted for the Borough of Stepney.—Defendant admitted the offence, but stated that he supposed the person in charge of the shop had filled up the vessel with ordinary water. —Mr. Young said lime water was prescribed for children with rickets and for the ailments of others, and the deficiency was serious.—Defendant was fined 20s. and 23s. costs.

CREAM OF TARTAR.

At Sixmilecross Petty Sessions, on Thursday, January 2, William Craig, grocer, Dunmoyle, was summoned for selling a quantity of cream of tartar not of the nature, substance, and quality demanded by the purchaser, in that it was certified by the public analyst to contain double the amount of impurities allowed. Defendant was fined 5s. and 15s. costs.

SWEET SPIRIT OF NITRE.

At Sixmilecross Petty Sessions, on Thursday, January 2, William Armstrong and Co., trading as chemists, at Grimley, were summoned for having sold a quantity of sweet spirit of nitre which was deficient in ethyl nitrite to the extent of 25 per cent.—The Inspector who made the purchase stated that he corked and sealed the bottle containing the sample which had been analysed.—For the defence it was contended that it was impossible when pouring spirit of nitre from one bottle to another to prevent deterioration taking place. The bottle which the Inspector had corked and sealed, it was alleged, was not filled, thus allowing the spirit to evaporate more readily.—The Chairman intimated that if the defendants were going into technicalities it would be necessary to have the analyst present. —The case was, therefore, adjourned in order that the analyst might be present

POISONING CASES AND INQUESTS.

CHLORAL HYDRATE.—A Birmingham house furnisher, named Isaac Gordon, who has been in the habit of taking sleeping draughts and was alleged to be of intemperate habits, took some chloral hydrate in a cup of tea on Monday, December 30, and died from the effects. Mr. Patrick, manager of Messrs. Magor's Stratford Road Branch, stated at the inquest held on Wednesday, January 1, that deceased came into the shop on the Monday evening and asked for sixpennyworth of chloral hydrate, remarking that he was used to taking it as a sleeping draught. He was supplied with a quarter of an ounce, and on being requested to sign the poison-book he did so, though that was not legally necessary in the case of chloral hydrate. Verdict: "Death from Misadventure."

Hydrochloric Acid.—An inquest was held at Islington, on January 4, in regard to the death of Albert E. Watson, a house painter, of Worth Road, Cattle Market, Islington. The evidence was to the effect that deceased drank part of the contents of a pickle jar which, it was subsequently ascertained, contained spirit of salt. The Coroner pointed out that there was no poison label on the jar, and he remarked that the poison had evidently been purchased at an oil-shop.—A verdict of "Death from Misadventure" was returned.

Obituary.

Case.—On December 28, at Holly Court, Ardleigh, Essex, the residence of his brother-in-law, William Townley Case, son of the late Henry Case, of Liverpool. Aged 49. Mr. Case was well known in the drug and chemical trade, and formerly travelled for the firm of Clay, Dodd, and Case, in the West of England and Wales. For the past ten or twelve years he travelled for Messrs. Boehringer and Soehne in the United States, Canada, and Mexico.

Cocks.—On December 26, Walter James Cocks, Chemist and Druggist, Southsea. Aged 42. Mr. Cocks had been a member of the Pharmaceutical Society since 1899.

Dewar.—On January 5, Peter James Dewar, Pharmaceutical Chemist, Dingwall. Aged 82. Mr. Dewar, who had been a member of the Pharmaceutical Society since 1852, was the son of the Rev. Alexander Dewar, Congregational minister at Avoch from 1806 to 1849. Mr. Dewar was connected with the firm of Dewar and Hay, chemists, of Dingwall, having commenced business in the town in 1845. He took a great interest in local affairs, for many years being a member of the Town Council; he was also local Treasurer for the National Bible Society, and for the Institute for the Blind at Inverness, and he held the rank of Major in the Ross-shire Volunteers. He was a successful business man, having built up a lucrative concern, which combined the practice of dentistry with that of pharmacy, and throughout his whole career he bore an unblemished character in the community. Apart from business it may fairly be stated that the principal energy of his life was devoted to the welfare of the young of the town of Dingwall, he having acted as Sunday-school superintendent in the Free Church for well nigh forty years. The poor also found in Mr. Dewar a good friend. The business is carried on by the surviving partner, Mr. Roderick Hay, a former apprentice with Mr. Dewar, who had been associated with him as partner for some years past under the firm name of Dewar and Hay.

Mallinson.—On January 3, Frederick William Mallinson, Chemist and Druggist, Bournemouth, formerly of Barnsley. Aged 37.

Richards.—On December 22, at his sister's residence, Neatham Villas, Farnham, Surrey, Frederick Richards. Aged 27. Mr. Richards, who was a Student-Associate of the Pharmaceutical Society, learnt his business with Mr. J. H. Bibbings, pharmaceutical chemist, of Newton Abbot, and for the past three years had been with Mr. E. C. Perks, of Sloane Square, London. He had been studying hard for the Minor Examination, when suddenly he was attacked with hæmorrhage of the lungs and, despite the most skilful medical attention, he gradually succumbed.

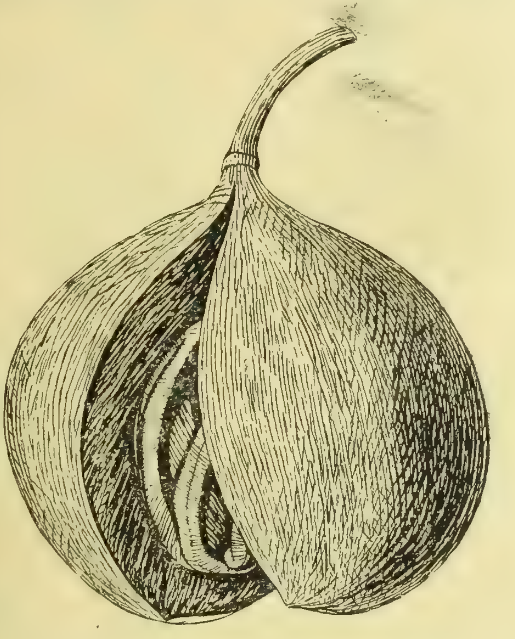
Russell.—On December 29, Charles James L. Russell, Pharmaceutical Chemist, South Croydon. Mr. Russell, who was a life member of the Pharmaceutical Society, joined the Society in 1853, his Major certificate being number 84. For many years he acted in the capacity of Local Secretary of the Society at Windsor, and always took a deep interest in pharmaceutical affairs.

Willsher.—On January 2, Stephen Henry Willsher, Pharmaceutical Chemist, Barnsley. Aged 61. Mr. Willsher had been a member of the Pharmaceutical Society since 1864, being a life member.

THE STUDENTS' COLUMNS.

Nutmegs and Mace.

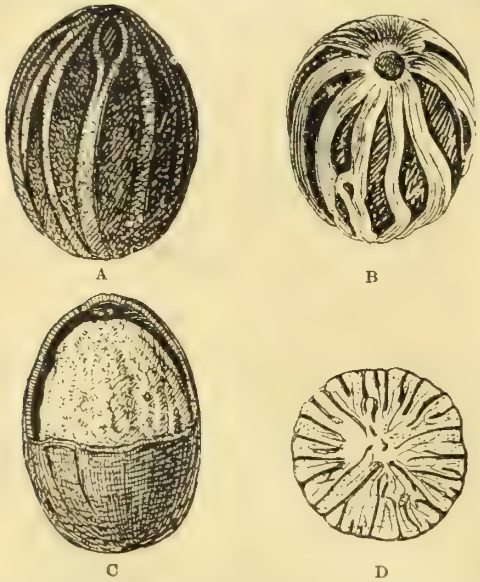
Nutmegs are the kernels of the dried seeds of a handsome, bushy, evergreen tree, known as *Myristica fragrans*, Houttuyn (N.O. Myristicaceæ), which grows wild in the Moluccas and Banda Islands, besides being largely cultivated in various parts of the East and West Indies, the nutmegs of commerce being chiefly exported from the Malay Archipelago to Amsterdam and London.



Fruit of Nutmeg Tree, *Myristica fragrans*, dehiscing, with seed partly exposed and showing arillus.

Nutmegs and mace were imported from India at an early date by the Arabians, who probably first became acquainted with them through the Persians. It also appears probable that nutmegs were known at Constantinople about the year 540, while both nutmegs and mace were being imported at Aden in the middle of the twelfth century, and were well known in Northern Europe by the end of that century. The Portuguese discovered the nutmeg tree in the Banda Islands in 1512, and the Dutch, who subsequently came into possession of those islands, attempted to secure their monopoly of the nutmeg trade by limiting the districts in which the trees might be cultivated. About 1800, however, the culture of the nutmeg was introduced into Bencoolen, Penang, and elsewhere by the English, during their occupation of the Spice Islands.

The nutmeg tree attains a height of twelve to fifteen metres, and is diœcious, the male and female flowers being on separate plants. The tree comes into bearing in its ninth year, and is said to continue fruitful for forty to sixty years, producing as many as two thousand fruits annually. The fruit is a fleshy fruit, like a drupe, about five centimetres in diameter, and not unlike a small round pear in shape. A distinct furrow passes round the fruit in a longitudinal direction, and as ripening proceeds, the yellow fleshy pericarp of the fructified ovary becomes dry and leathery, then splits into two parts where the furrow appears, disclosing a single dark brown, shining, ovate seed, enveloped in a fine crimson, fleshy, leafy mantle or arillus which, when detached and dried, becomes reddish-yellow and constitutes the mace of commerce. The nutmeg tree yields three or more crops annually, and may bear all the year round. The fruit is gathered by means of a hook attached to a long stick, the dried pericarps being subsequently detached, the mace removed, and the seeds carefully dried. For that purpose they are placed on frames in a brick building and exposed to the gentle heat of a smouldering fire, with arrangements for a proper circulation of air. The drying operation lasts for two months, during which time the nutmegs are turned every second or third day. When properly dried, the kernel rattles in the thin dark brown shell (testa) when shaken, and the shells are then broken with a wooden mallet, after which the nutmegs are picked out and sorted. Nutmegs are sometimes dressed with lime, but Penang nutmegs are always exported in the natural state. The treatment with lime was originally adopted by the Dutch, with the object of preventing germination of the seeds after exportation, but it tends to spoil the nutmegs and is said to be unnecessary to protect them against the attacks of insects. Broken and imperfect kernels are usually reserved for the production of the volatile and expressed oils which they contain.



Nutmegs.—A and B, Seeds enveloped by arillus; C, seed with arillus and part of testa removed; D, transverse section of kernel, showing ruminated albumen.

As seen in commerce, nutmegs rarely exceed twenty-five millimetres in length, and they are rather less than that in thickness, being oval, rounded, or broadly and bluntly ovoid in shape. Nutmegs which have not been dressed with lime are greyish-brown in colour. The surface is marked with shallow furrows, which present the appearance of network (reticulated), and, when examined with a powerful lens, it appears finely pitted, in addition to being marked with minute reddish points, dark reddish-brown lines, and irregularly elongated spots. A transverse section of a nutmeg has a waxy, marbled appearance, the latter being caused by the reddish-brown inner seed coat or tegmen penetrating into the lighter-coloured albumen in long narrow strips or veins. The embryo can be detected at the base of the albumen, close to a scar—the hilum—indicating the point where the seed was formerly attached by a cord (funiculus) to the placenta in the fertilised and developed ovary. The hilum lies in a small circular depression surrounded by a raised ring, and a furrow on one side of the nutmeg indicates the course of the raphe, a cord or ridge of fibro-vascular tissue extending from the base to the apex, terminating in the chalaza or point where the kernel joins the integuments of the seed.

Mace, as already stated, consists of the dried arillus of the nutmeg. It originates in a thickening of the funiculus, extending to the outer integument of the seed near the opening (exostome) in the testa which occurs at the apex. As the arillus develops and surrounds the seed, it divides into branching lobes, impressions corresponding to which are marked on the dark-brown testa of the seed. Those impressions must not be confused with the depressed lines on the surface of the nutmeg, which are produced by the infolding of the tegmen, and correspond to branching fibro-vascular bundles near which the infoldings occur.

The seed kernel and arillus both possess a strong aromatic odour and taste, due to the presence of volatile and fixed oils. Nutmegs yield from 8 to 15 per cent. of volatile oil, and dried mace from 4 to 15 per cent. of a very similar but more fragrant oil. The expressed oil or fat commonly known as "oil of mace" is also present in both nutmegs and mace, the former containing from 25 to 30 per cent. or more. Nutmegs possess aromatic, stimulant, and carminative properties, and act as a narcotic poison in large doses. They are only used in medicine for flavouring or covering the taste of other medicines, the official spirit, which is prepared by dissolving the volatile oil of nutmeg in strong alcohol, being chiefly employed for that purpose. The volatile and fixed oils have also been used in chronic rheumatism, and in the preparation of lotions for the hair. The chief use, however, of both nutmegs and mace is as condiments.

Other species of *Myristica* produce seeds which are distinguished from those of *M. fragrans* by their shape, being usually longer, narrower, and more or less destitute of aroma. The seed of *M. malabarica*, Lamarck, a native of India, is used both medicinally and as a spice in certain parts of India, the fixed oil it contains being made into an ointment for indolent ulcers, etc., while the kernel is taken internally as a remedy for headache and as an aphrodisiac. The fruit of the tree is an oblong, tawny, hairy fruit, from six to eight centimetres long, with an elongated seed from three to five centimetres in length, and enveloped by a dark brownish-red arillus, the lobes of which are longer and thinner than those of true mace, besides being twisted and folded into a cone at the top. The kernel has the same ruminated structure as the nutmeg, but has only a fruity odour, with scarcely any aroma. The dried arillus, which has been sold under the name of "Bombay mace," is also deficient in odour and flavour.

Solidified Alcohol.

To a litre of alcohol heated to 60° C. on a water bath, 28 to 30 grammes of Venetian soap, very dry and cut fine, are added, also 2 grammes of gum lac. When completely dissolved, and whilst still warm, pour into metallic moulds to cool. The gum lac preserves the material and prevents the too rapid evaporation of the alcohol. The soap is left as a residue after burning.—*Meyer Bros. Druggist*, **22**, 310.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

MISTLETOE POISON. According to E. Laurent there is, in seedling plants of the mistletoe, a substance which is toxic to the pear tree. The substance occurs also in the pulp of the mistletoe berry, and is no doubt secreted in the embryo.—*Comptes rendus*, **133**, 959.

VITALITY OF FALLEN LEAVES. According to M. G. Boyer, after leaves have fallen to the ground in the autumn, they still exhibit, to a certain extent, the phenomena of life. It may be demonstrated, in particular, that the process of respiration has not altogether ceased, but that it may even proceed with considerable energy. The observations were made chiefly on leaves of *Euonymus*.—*Soc. Sciences Phys. et Nat. Bordeaux*, 1900, 68.

SOLDANELLA RESIN. L. Beulaygue has extracted from the rhizomes of *Calystegia soldanella* a purgative resin, which he suggests may be used as a substitute for scammony resin. Prepared by the official process for the extraction of resin of scammony, it forms an amber yellow resin, soluble in ether, and in alkaline solutions. It melts at 113° C. The dose, as a purgative, is 24 grains for an adult, or 12 grains for children. The resin occurs to the extent of about 12 per cent.—*Répertoire* [3], **13**, 393.

SCATOCYANIN. E Schunck, in a communication to the Royal Society, describes a new crystalline chlorophyll derivative obtained from the fæces of grass-fed cows. It resembles phyllocyanin, but is not identical with it, and has been named scatocyanin. It is obtained by extracting cow-dung, after pressure between folds of paper, with cold chloroform, filtering, and evaporating in a warm place, when a quantity of lustrous, purplish blue crystals separate in the form of spangles. These are collected and washed with alcohol. It may also be obtained by dissolving in chloroform the flocculent deposit thrown down on cooling from a hot alcoholic extract of cow-dung. It occurs in rhombic plates, or elongated, flat prisms, pale brown by transmitted light, with a brilliant metallic lustre by reflected light. It does not sublime. It is almost insoluble in boiling alcohol, ether, carbon disulphide and benzol, but dissolves more readily in chloroform, which solution gives five absorption bands almost identical with those of phyllocyanin. It gives a fine crimson solution with boiling glacial acetic acid. It separates on cooling from a saturated boiling solution of this acid in fine lustrous needles. The solution in H_2SO_4, diluted with several times its volume of water, changes from purplish blue to fine purple without precipitating. On standing it becomes nearly colourless, depositing rosettes of lustrous needles, probably unchanged scatocyanin. Another crystalline substance, more soluble in alcohol than scatocyanin, which occurs as a dull red mass of crystalline needles, is sometimes, but not invariably, present in the fæces of grass-fed ruminants. Its chloroformic solutions show no absorption bands, the solution in H_2SO_4 when diluted with water, it is at first reddish yellow, then develops a fine violet colour. No unchanged chlorophyll was found in the excreta, contrary to published statements to that effect, but, in addition to the above, phylloxanthin, or a body closely allied to it, is present. The two crystalline bodies described are believed to be new chlorophyll derivatives.—*Chem. News*, **85**, 1.

PHYSIOLOGICAL ACTION OF BERBERINE. Mosse and Tautz find that berberine acts as a powerful poison on animals, causing atrophy and atony, reducing the reflex action of the nervous system, and producing local nervous affections. This is followed in a short time by nephritis and leucocytosis. In frogs, the action of strychnine was arrested or much modified by berberine. It arrests the development of bacteria and of moulds.—*Chem. Zeit. Rep.*, **28**, 249.

CHLOROPHYLL ASSIMILATION. L. Macchiati regards the production of the numerous diastases and enzymes which occur in animals and in the higher plants as a function of the vital activity of the living cell. The chlorophyll assimilation of green cells is, in all probability, the result of the action of a special diastase secreted by the chloroplasts and the chlorophyll-pigments under the influence of solar radiation. The phenomena of assimilation or synthesis, and of decomposition or dissimilation, are, in this view, special modes of the fermentative process.—*Bull. Soc. Bot. Italiana*, 1901, 323.

LIMITS OF VARIATION IN PLANTS. As the result of a long series of observations, Dr. J. W. Harshberger concludes that variation in the size and shape of leaves is in part due to the persistence of juvenile forms, to the arrested development of such leaves, and to their evolution and transmutation into higher forms. These changes are in most cases due to two causes—an internal hereditary impulse, and the direct influence of the environment. The observations were made on leaves and fruits, and on the entire plant.—*Proc. Acad. Nat. Sci., Philadelphia*, 1901, 305.

CHEMISTRY OF RHODODENDRON CHRYSANTHUM. From the leaves of *Rhododendron chrysanthum*, which have been employed as a remedy for rheumatism and gout, Von Archangelski has isolated three new bodies. Rhododendrol, $C_{10}H_{12}O_2$, in long, slightly bitter, colourless needles, melting at 79-80° C.; rhododendrin, $C_{16}H_{22}O_7$, in odourless colourless crystals melting at 187° to 187·5° C., which on hydrolysis yield rhododendrol and a hexose, according to the equation—

$$C_{16}H_{22}O_7 + H_2O = C_{10}H_{12}O_2 + C_6H_{12}O_6.$$

Neither rhododendrin nor rhododendrol have any physiological action. Andromedotoxin, another glucoside, resembles digitalin and is very toxic. In addition to these Thal has previously reported the presence of another glucoside, ericalin, in the same plant.—*Apoth. Zeit.*, **21**, 570., after *Archiv. exper. Pathol.*

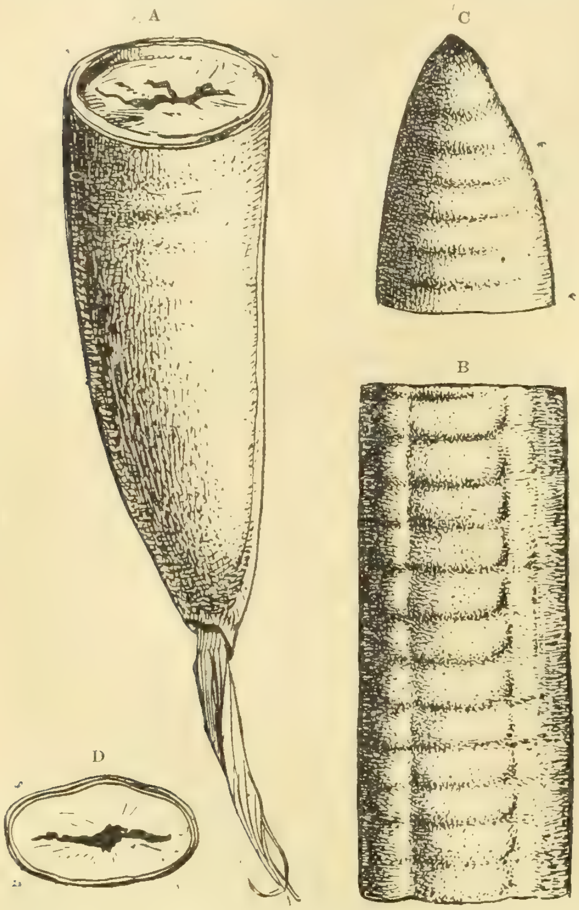
ADULTERATED BELLADONNA LEAVES. According to C. Hartwich, the leaves of *Phytolacca decandra* are used to adulterate commercial belladonna leaves in the same manner as the root of that plant has been substituted for belladonna root, as pointed out by E. M. Holmes (*P.J.* [4], **12**, 591). Although the general form of the two leaves is very similar, the structure of the epidermal tissue serves to distinguish them. In *Belladonna*, the epidermal cell-walls are sinuate, and the cells of irregular shape; rounded stomata are present on both the upper and under surface of the lamina. In *Phytolacca*, the epidermal cells are polygonal, and the stomata more elliptical. The leaves of *Scopola carniolica* are also used as a substitute for belladonna leaves, and are even more difficult to detect by their microscopical characters. Whole leaves may be differentiated by the fact that they show no stomata on the upper surface, and no simple hairs, but wart-like papillæ. The outline of the epidermal cells is more sinuate than in belladonna, and the form of the cells more irregular.—*Pharm. Zeit.*, **46**, 848, after *Schweiz. Wochenschrift für Chem. und Pharm.*

Vol. 68. (Fourth Series, Vol. 14.) No. 1647.

THE NATIVE REMEDY FOR BLACK-WATER FEVER.[*]

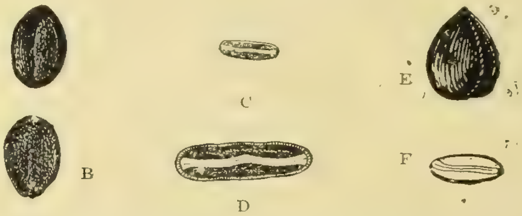
BY E. M. HOLMES, F.L.S.

Since the note published in this Journal on November 30 was printed, the English medical man who sent the drug to Messrs. Christy and Co., viz., Dr. O'Sullivan Beare, of Pemba, has brought to the Museum a mature pod of the plant and some seed, flowers, and leaves of the tree. From the characters of the pod, it is certain that the plant is not identical with the *Cassia abbreviata*, Oliv., described in the 'Flora of Tropical Africa,' Vol. II., p. 271, as I had previously supposed, judging from the leaves and flowers alone, although it differs from it in little except in the pod and the shape of the seed. It is necessary, therefore, to give a description of the materials received from Dr. Beare. (I propose to name the plant after its discoverer) :—



Cassia Beareana.—Base (A), middle portion (B), and apex (C) of pod; D, transverse section of pod.

C. beareana, n. sp.—A small tree attaining 20 to 30 feet, the young leaves not seen, but the inflorescence is shortly pubescent, especially on the rachis. The leaves are about 8 to 10 inches long, and the leaflets in 8 to 10 pairs, elliptical, obtuse, rounded, or very broadly cuneate at the base, glabrous with reticulate venation. The leaflets are 1¼ to 1½ inch long, and ⅗ to nearly an inch wide in the centre, petiolules about 1 line long, slightly rugose, the common petiole without glands. Racemes on (terminal and (?)) lateral shoots, rather short and subcorymbose, the rachis about 3 inches long, shortly pubescent, with persistent recurved bracts and bractlets, about ¼ to ⅓ inch long, linear, acuminate, and minutely glandular-pubescent. Pedicels ascending, straight, slender, furrowed, faintly pubescent, or nearly glabrous, 2½ inches long. Petals obovate oblong, scarcely tapering to the base, ⅗ to ¾ inches long, canary yellow, beautifully veined with dark red or chestnut veins. The longer stamens exceed the petals; the filaments are distinctly dilated near the middle. The young ovary is covered with appressed whitish hairs. Legume about 30 inches long, 1 inch broad, and ½ inch thick, compressed, with the sutures not at all prominent, glabrous, or not visibly hairy, with the dissepiments showing on the surface as transverse lines about ¼ inch apart. The seeds are blackish brown, oval, about $\frac{7}{16}$ inch in length, and $\frac{5}{16}$ inch in width, and nearly ⅛ inch in thickness, with a central longitudinal linear depression, and do not appear to be surrounded with pulp.



Cassia Beareana.—A, B, Seeds of *C. beareana*, nat. size; C, transverse section of seed, nat. size; D, transverse section, enlarged; E, seed of *C. abbreviata*; F, transverse section of same, nat. size.

The pods of *C. abbreviata*, Oliver, are stated in his description to be 12 to 15 inches long and subterete, with moderately prominent sutures, and to be dotted throughout with a dense tawny, velvety tomentum. The specimen in the Kew Herbarium possesses these features, but appears not to be fully developed. The sutures are, however, so distinctly prominent or projecting that it differs entirely in this character from the large pods of *C. beareana*, in which the pods are as smooth as in those of *Cassia fistula*. But on comparison of the above description with that of *C. abbreviata*,[*] Oliv., it will be seen that Dr. Beare's plant differs chiefly in the glabrous leaves, the distinctly dilated filaments, and the large glabrous compressed pod with prominent septa, in the more rounded form of the seeds and their smaller size. Dr. Beare informs me that the tree has a trunk attaining about 8 inches in diameter, and in habit resembles an apple or pear tree. The natives use only the root for hæmaturia and black-water fever, but the leaves are used as an application to ulcers and skin diseases. Dr. Beare is anxious that the remedy should receive a fair trial, and offers at his own expense to supply material for any medical man in East Africa who will try it in black-water fever and hæmaturia, and report the results to him.

NOTE ON GLACIAL ACETIC ACID.

BY F. H. ALCOCK.

Six months ago a quantity of glacial acetic acid was purchased and left in the bottle undisturbed, after proving that its strength was up to B.P. standard (99·6 per cent.). On again examining it now by the turpentine test, it appears to have lost strength, for it is not miscible with an equal volume of oil of turpentine as it was when first received. The bottle is an ordinary stoppered bottle, such as is used for corrosive liquids. The necessity for well-closed vessels and great care in storage are thus shown, in order to prevent disappointment when making important preparations containing this acid.

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[*] In a pod labelled *C. abbreviata* in the Kew Museum, No. 1, received from the late J. Buchanan, from Nyassa Land, the pod is nearly 2 feet long, *downy* throughout, *cylindrical* : the sutures are *not prominent* and the seeds are *oval* and encased in pulp.

TREATMENT OF WOUNDS IN ANIMALS.

BY "CENTAUR."

So far as general principles go, the treatment of wounds in animals is the same as in man, but no one makes such a hash of horse doctoring as the medical practitioner when he applies his experience of mankind to the lower animals. This would seem paradoxical, but the writer hopes that the explanation will be found further on. In the following notes I shall briefly sketch the commoner sorts of wounds such as may come under the care of the pharmacist, the horse owner, and the cattle breeder. The same classification of wounds is adopted by veterinary surgeons, and individuals are to be found who revel in very fine distinctions, elegantly expressed in Latin terms. We do not propose to introduce them here, but simply divide wounds into the classes most commonly met with, and suggest treatment which has been found successful among practical veterinarians.

Now that the public possesses a general knowledge of germs, it may be assumed that there is no pharmacist so backward as not to make use of antisepsis at the first possible moment in the treatment of wounds, even before he has examined the nature and extent of them. Many of our soldiers during the present war owe their lives to self-dressing with antiseptics; while the mortality among wounded horses was much greater relatively, owing to their being left until the action shifted, or they were no longer in the zone of fire, for, notwithstanding some maudlin letters in the lay Press upon the subject of creating a special corps of men to risk their own lives in attempts to cut short the suffering of animals, men's lives are still held to be of more value than those of animals, and the vet.'s subjects have often had to wait.

Wounds on the Limbs.

The great majority of wounds (save those incurred in war) happen to the limbs and not the trunk. In the case of horses and cattle there are no muscles below the knees and hocks, hence comparatively shallow wounds are of much more serious import than injuries of a similar nature to the human arm or leg. As soon as the skin is divided, important tendons, ligaments, or joints are exposed. The knee of the horse corresponds to the wrist of the man, and his hock to the latter's ankle. It is important to bear these matters in mind. The horizontal position of the body and the fact that the animal stands on all four legs should be remembered, as well as the blood in the veins having always to ascend against gravity. A further point, and one over which medical practitioners so frequently stumble, is the ease with which effusion takes place into the limbs, and the great facility with which it is absorbed by exercise. What doctor would order a dropsical patient to be walked or trotted a mile to "fine his legs" if dropsical swelling had set in? He would regard such enlargement as indicative of grave disorder, but the veterinary surgeon will expect such swelling in a limb having even a slight wound, and often in hard-worked horses in a fair state of health, when it occurs, as it frequently does, after standing in the stable for a couple of days. The filling of two days will be absorbed by less than two hours' exercise. If exercise cannot be given, a dose of nitre in a mash or a diuretic ball will go a long way to put matters right.

A bandage upon a human wrist, unless immoderately tight, will have no ill effect upon the hand, with its muscles, as well as tendons, ligaments, and joints, but a bandage on a horse's knee (assuming that it can be kept in place) will cause what appears like elephantiasis below. There are no muscles to bear gentle compression, and if a knee or other portion high up a horse's leg is to be bandaged, the lower portion must be included. Hence, if a practical veterinarian attends a case of so-called "broken" knee, he will begin at the bottom, placing a pledget of tow or wool in the hollow of the heel, and bandaging upwards to prevent the effusion which follows the wound "falling" into the lower part of the limb. The writer has seen some very extraordinary results of the human surgeon's attempts to compress with elastic bandages such defects as bog spavin, thoroughpin, etc. It was the custom of some to scoff at the vet. and his "blister for everything," but the practice is the outcome of experience, the accumulated knowledge of centuries, but without a literature to explain the why and wherefore. So with wounds only general principles apply, as was stated at the outset of these remarks, and the customs which success have sanctioned are generally reverted to after due trial of other methods.

Simple or Incised Wounds.

Simple or incised wounds are those in which tissues are cleanly divided by some sharp instrument, and provided no pyogenic or other germs gain entrance, all that is needed is to bring the edges together with some suitable substance, and so retain the lips in apposition. Surgical wounds are mostly of this nature, and being intentionally made, every precaution can be taken beforehand to keep them aseptic or germ-free. When our animal friends meet with a clean cut, we should apply some reliable antiseptic immediately it is brought to our notice, and consider at the same time what will be the best means of keeping the wound closed. Nearly every surgeon has his fancy in respect of antiseptics and disinfectants, and at the present time perhaps, chinosol is that most favoured. The writer has certainly had the best results with it in a large operating connection, and singularly enough, after an interval of thirteen years, had a case of tetanus follow upon operation when substituting another agent of repute. The pharmacist, accustomed to render valuable first aid to persons brought in wounded, invariably thinks of sticking plaster unless he has acquired some veterinary knowledge. This material is found to be almost useless to the horse or dog doctor, as the parts must first be shaved before it can be made to adhere, and the rapid growth of hair will quickly lift it off again. The animal patient has in too many instances been already bathed with a dirty sponge or rag, with possibly foul pond water, before being brought to the pharmacy; every invitation being given, so to speak, for the entrance of micro-organisms, which it is then the duty of the surgeon to seek to destroy by liberal washing with disinfectants.

Incised wounds, if short, need no sutures, but will heal if simply bound up in the clot of blood which will quickly form under any sort of bandage. As the pharmacist has established a habit of affording valuable information to his clients without any reward, he will take the opportunity while dressing a wound, to impress upon them the folly of bathing wounds with any but antiseptic dressings, and point out the possibilities which lurk in the cobweb so beloved of stablemen, carpenters, and others. Restive animals may be induced to stand while sutures are introduced, if the wound is first painted with a 10 per cent. solution of cocaine, but in the case of horses, the twitch will most likely be called in, with or without a local anæsthetic. It is a cruel necessity often, but man's strength is no use when pitted against that of a horse weighing three-quarters of a ton, and we cannot afford to disregard the first law of Nature, but preserve ourselves from being kicked, or crushed, or bitten. The larger needles kept in stock for surgeons are those most useful for wounds in animals whose skins are for the most part thick, and require considerable force to penetrate. The light hold taken by the human surgeon is not suited for veterinary work; the human patient will not fill up his time by biting out the stitches, or gnawing off the splint which has been adjusted with so much care; but the smaller animals, particularly dogs, will destroy any sort of appliance, unless deterred by special muzzles. Deep sutures, or those having a wide hold, will be more likely to be retained, as a gentle pull or preliminary trial of the teeth will prove unsatisfactory to the patient, although, it should be added, some are not to be denied, however much pain they inflict upon themselves. Horses, as a rule, do not interfere with sutures, but some are notorious "tear'ems" and will not suffer the ordinary stable bandage applied to a sound limb. The same may be said of cattle. The cat, which is so troublesome an animal to restrain while doing any sort of operation, is the least disposed to bite off appliances when once properly adjusted.

The size of a suture thread, as well as of a needle, is not so important as the material employed. This should of course be antiseptically dressed, and kept saturated afterwards, if to be retained for any length of time, or suppuration may be looked for around each stitch. It is not perhaps so well known as it should be, that wounds will heal up eventually, exactly opposite where the sutures were first placed, although they may have been removed within the first two days, and a gap left for weeks before repair has taken place. This applies to other than simple or incised wounds, if no skin is actually lost; the latter never in any case being replaced by true skin, but by a fibrous substitute wanting in elasticity; never having the appearance of true skin, and of course bare of hair. Perhaps the most familiar example is the so-called broken knee which, however smooth and well it may heal, will have a shining bald place if the integument was divided and the hair bulbs destroyed.

Simple or incised wounds where there is no bruising or other injury beyond the division of the tissues, and where no germs have entered, may be expected to heal by adhesion and without the formation of matter of any kind. The edges simply stick together, and the union, so far as outward appearance goes, is a dry one. Such operations upon horses as dividing the main trunks of nerve in the limbs, to cut off sensation from diseased feet, are constantly performed without any subsequent discharge, and bitches and cats have their abdominal muscles cut through and the horns of the uterus pulled out and divided, and the wound stitched up again, without subsequent swelling or more than a few hours' discomfort. The writer has frequently had cats jump upon his shoulder and purr with pleasure the same day upon which the formidable operation of ovarectomy has been performed. Without antiseptics, or where they are imperfectly employed, micro-organisms enter, and in the case of the horse's leg, suppuration follows, and much swelling, pain, and loss of time, while with the cat or bitch peritonitis and death will likely result. All practical operators of experience will agree upon this, and these operations, which are outside the pharmacist's sphere of action, are here mentioned by way of proving the immense importance of first applying your pet antiseptic and continuing it so long and as often as you dress a wound. The animal surgeon has in his subjects creatures less disposed to harbour infective organisms than the patients of the human practitioner, but this is somewhat balanced by their dirty environment when in captivity or domestication. The tetanus bacillus, found in garden mould, will have more opportunity for invasion of the house dog than his master, who wears boots and will not lie down upon the soil with or without a bandage.

There are a variety of stitches, but what are called interrupted or separate sutures are most easily put in and, on the whole, best, as the breaking away of one is not necessarily followed by the giving way of the remainder. They should be tied only just tight enough; swelling should be allowed for. Nor need they be very close together for simple wounds. The lowest end of a wound should be least tightly drawn together in order to permit of drainage. Where union by simple adhesion or adhesive inflammation takes place the sutures should be removed in about thirty hours, or before they have time to excite suppuration by their presence as foreign bodies and the facilities they offer for the entrance of the pyogenic organism, which is said to be the origin of pus formation. Where from the first the wound is of such a nature that simple adhesion is not hoped for, there is still no necessity for retaining sutures more than a few days. The appearance of what used to be called laudable pus is to be desired in a wound which will not unite by the simpler process of adhesion. If the matter is thick and yellowish it may be assumed that healthy granulations are forming underneath, and will soon reach the surface. A discharge that is sanious, or brick-red and thin, or various in density, with granules here and there, is not a favourable sign of healing, but suspicious of fistula formation, and will be referred to in connection with punctured wounds. The granulating wound as it makes progress produces less pus and of greater density and deeper colour. When cleaned, a bright red surface is presented, but often of such irregular growth that the surgeon's judicious interference at this stage will make a permanent difference in the amount of blemish finally remaining.

It may be well to say here that the old idea of regarding these granulations as "proud flesh" or something to be objected to is quite a mistaken notion. Because of the need of repression it is to be presumed the purely practical doctor of wounds regarded granulations as undesirable. We know them now as building materials—bricks and mortar and cement, with which a breach is filled up—but Nature's estimate is sometimes in excess of the requirements, and at others, the materials are not brought in sufficient quantity or of indifferent quality. The profuse and irregular growths need to be cauterised with one or other of the caustics known to pharmacy. Here, again, individuals have their preferences, but it will be agreed that where only mild repression is required, nitrate of silver will check the growth, form a scab, and by its own contraction, draw nearer and nearer the lips of the wound. The process may be hastened by roughly rubbing off the scab a day or two later, and allowing a fresh one to form; or it may be that another cauterisation will be desirable. If a very powerful and lasting caustic is wanted, where, for instance, the attendant cannot see the patient again for some time, and fears that the so-called proud flesh will get beyond control, he will use chloride of zinc, either in solution or stick, but wounds so dressed often take a wearisome time in mending. In the other case we have supposed, where granulation is feeble, the granules being pale and soft, some stimulant is required. A little pulv. resinæ dusted over the surface or pot. nit., or perhaps a lotion of zinc. sulph. will cause it to take on a healthy growth. Poulticing, where poultices can be applied, will bring increased nutrition to the part and promote healthy granulation.

Torn or Lacerated Wounds.

These are the most frequent among horses and most of the domesticated animals. The first are liable to be torn by accidents in the hunting field, in harness, and in the stable. A frequent and fruitful source of lacerated wounds occurring in the stable being the thoughtless practice of driving nails into the walls in lieu of proper receptacles for stable tools and gear. The majority of torn wounds in cattle are inflicted by the horns of their fellows. The dog, besides the many lacerated wounds incurred by the teeth of others, is subject by his close associations with his master to all the risks attending the many and various occupations of men; hence we find every variety of wound in the dog. Cats receive wounds from the teeth of dogs, of other cats, from broken glass, and from their own conduct when panic stricken. Some of the most dreadful lacerated wounds along the back are incurred by cats when trying to get under a gate too low to admit them. Treatment of lacerated wounds should be undertaken as early as possible, and animal owners should be impressed with the undesirability of bathing wounds except with antiseptics, and the importance of getting the edges approximated while there is blood flowing. A wound that has been bathed until it presents a ghastly pallor may never unite, the injured tissues may be practically dead before the sufferer is brought to the surgeon. "For the blood is the life," we are assured by Moses, and his dictum is quoted with approval by a famous patent medicine vendor. If satisfied that no dirt or foreign body remains within it, the wound should be closed with sutures. Some consideration will be needed as to the fitting of the parts, and the stitches must be so arranged as not to leave any "puckering" of the lips. Over all, a light bandage should be placed, the inner aspect of which should be dressed with an oily antiseptic. Carbolised oil does well for most animals, but must not be employed for the cat, cavie, or rabbit, as there is a disposition to absorb this substance even through a whole skin, and cats have been killed by a bath where carbolic soap has been used. No morsel of hanging skin should be cut off, unless the operator is absolutely sure that it is already dead.

Many lacerated wounds seem to the tyro to have a lot of superfluous skin hanging loose, but the experienced surgeon will be very conservative of it, knowing that before his work is done there will assuredly be insufficient. It is by granulation or the production of "proud flesh" that union will take place in a lacerated wound. In parts it will likely require stimulating with such agents as have already been referred to in speaking of incised wounds, and at other places need repression by means previously mentioned. It is truly surprising how lacerated wounds in animals will grow together, and leave but slight blemish. Torn eyelids, for instance, resulting from nails in the stable walls, or incurred in falls, if carefully sutured with fine material, and painted over with some antiseptic varnish (nothing is better than our old friend tinct. benz. co.) will hardly be noticeable after a time, so closely does the fibrous tissue, substituted for skin, contract. With wounds of the class we are now considering there is often disappointment after the first few days or a week has passed favourably; a thin reddish discharge takes place, and the healing process is arrested; the wound looks unhealthy, and examination may fail to detect any dead tissue within, as the cause, but such is probably the reason. The nozzle of a syringe can be introduced and some powerful disinfectant injected in every direction. Such irrigation often leads to repair, and no further trouble is experienced. In other cases the arrest is permanent, owing to deep-seated injury to bone, ligament, or tendon, which is either partially detached or unable from other causes to make ts escape through the orifice of the wound. Here a bold surgeon is needed, who is not afraid to re-open and probe the wound: searching for the enemy, and dislodging him.

As we are not adhering to strict classification of wounds it will be convenient to class those injuries to the feet and legs which horses receive from others, or inflict upon themselves (in making short turns in harness), among the lacerated and contused. They occur around the coronet or just above the hoof, and the calkin is frequently the offending body. Blood may or may not be drawn at the time, but great pain and inflammation follows, a slough finally coming away and leaving a wound to be treated. It is an irregular contused wound rather than a lacerated one, and when occurring in front of the foot where there is little covering to the joint, may prove fatal, when the slough comes away and an open joint follows. Much has been written about the treatment of this class of wound, but there is probably no better method than the ancient one of daily dressing with tinct. benz. co. It protects from the air and keeps out dirt and foreign bodies and, if the joint is disposed to open, forms a varnish which in many cases has prevented a fatal termination.

Punctured Wounds.

While the simple incised wound is the least to be feared, and the lacerated often looks worse than it is, the punctured wound with small orifice and absence of hæmorrhage is really the most to be dreaded. The owner seldom deems it necessary to obtain advice, and does not, of course, probe it to ascertain its extent or direction. Punctured wounds most often occur in the feet of all animals. They are also found under the arms and between the hind-legs, as the result of jumping and becoming impailed on hedge stakes, fences, iron railings, etc. When occurring in a front limb, on the inner aspect, and within the sphere of the respiratory muscles, there is usually a rapid ephysema of the adjacent parts, owing to the drawing in of air, as the chest muscles act in expanding the thoracic cavity. Further changes take place, and death sometimes follows. First aid should consist in plugging such wounds with a tent of carbolised tow or other substance. When the animal can be placed in a suitable stable or kennel, the wound should be explored to ascertain if a broken off stake or other body is concealed, and held up by the swelling which has taken place since the injury was inflicted.

Very remarkable cases are on record of hedge stakes and broken-off sticks being long retained and coming out at distant parts. It is practically safe for an inexperienced hand to probe and enlarge such wounds, provided an antiseptic is employed. These staked and punctured wounds, whether inflicted by a large body or a small nail, or a pin, are ever disposed to unite at once, and presently weep from a tiny orifice which, when examined, is found to consist of a drain or pipe known to surgeons as a fistula. They are all to be feared whether occurring in the foot as "quittors," in the poll as "poll evil," or the withers as "fistulous withers." All need the same treatment in principle, although the difference in situation will influence the surgeon in his selection of remedies. The chloride of zinc in solid sticks which he may deem desirable to destroy a fistula in the withers, may not be safe for a poll evil, where but little tissue intervenes between the wound and the spinal cord. No successful treatment can be looked for without first destroying the sinus or drain pipe which in animals is rapidly formed, and of very strong material. The human surgeon may succeed with an artificial drain, an india-rubber tube or other drainage apparatus, but the veterinary surgeon cannot keep his patient in bed or restrain him altogether from interference with surgical dressings. If he could ensure the behaviour of the animal, nothing short of destruction of the sinus would answer. This is done either by instruments or cautery, actual or potential. The probe pointed bistoury, assisted by a director, may, in the hands of a careful surgeon, lay open the sinus and eventually cure it; the actual cautery in the form of a red-hot wire or rod may penetrate to the bottom of a straight sinus, but fistulæ have a little way of their own of going round corners and winding about among soft tissues, avoiding the bones and harder substances, and so it often happens that when the strictly scientific veterinary surgeon has failed to "cure" a quittor or fistulous wither, a bold bad quack comes along, with his vallates solution or his "vitriols," his "markary" or his "sublimate," and, in the words of Voltaire, "pours in medicines of which he knows little into bodies of which he knows less," but with a success which makes his reputation as a specialist. The powerful escharotics find their way into the branches which fistulæ are wont to throw out; a great slough or core presently comes away; granulation, as in an ordinary wound, follows, and the yawning cavity, which the empiric's corrosives produced, is rapidly filled up and scarred over.

Fistulous wounds of the wither permit of exploration and drainage in a manner denied when treating such wound in the foot (quittor) or in the poll (poll evil). They can be "bottomed" as it is called, and a seton of tape or rope, dressed with some caustic agent, passed through the whole extent of the sinus and brought out at the lowest point. These setons when regularly turned and dressed will destroy the pipes which are spoken of as sinuses, and perhaps give egress, at the dependent orifice, to the offending body which originally gave rise to the fistulous wound, but the dead matter may be situated on the spines, as it is often when resulting from an ill-fitting saddle pressing down upon the spinous ligament. In such cases the surgeon will endeavour to scrape away the débris. Fistulous wounds are specially formed by Nature for getting rid of some dead or injured tissue; hence we find with splintered bones, if the detached portion is no bigger than a pin's head, it will often give rise to a fistula, through which the offending body will eventually pass. With the domesticated animals, however, the sinus does not heal when its mission is fulfilled, and we are justified in destroying it as soon as formed, for in that way we give more room for the detached bone, or dead tissue, bullet, or splinter, or whatever it may be, to pass out and save much valuable time in recovery.

THE PREPARATION OF COMPRESSED TABLETS.

BY AN ORDINARY PHARMACIST.

But little information on the preparation of compressed tablets has hitherto been published and, several years ago, some brief notes on the subject were compiled and published in the *Pharmaceutical Journal.* Those notes have been found extremely useful by many pharmacists, but further information on the subject has since become available, and the matter formerly published is now largely amplified. Though it will not pay pharmacists in most cases to make their own compressed tablets for stock, there should be no question about the desirability of being in a position to prepare any tablets that a medical practitioner may feel disposed to prescribe, and though, until quite recent years, no thoroughly satisfactory tablet machines have been available for dispensing purposes, that difficulty is now non-existent. One of the most suitable machines, which has been specially designed to serve for dispensing medicines in tablet form, as well as for making compressed tablets for ordinary sales, is the Freck prescription tablet machine, for which Messrs. Maw, Son, and Sons are the agents for this country. Though sold at the comparatively low price of fifty shillings, it possesses the same advantages as higher-priced machines used for making tablets on the large scale, and pharmacists who desire to be thoroughly up to date might do worse than give the machine a thorough trial.

Whatever machine is selected, the operator should become thoroughly acquainted with all its parts. It should also be kept scrupulously clean, the surfaces of the dies and punches being maintained in a smooth and polished condition. Before commencing operations, two or three tablets should be made from weighed quantities of material, to enable the operator to adjust the pressure and size for the work in hand. Excessive pressure should be carefully guarded against, more especially in the case of salol and similarly insoluble substances, a regular, easy motion of the machine being what is required. The greater the pressure employed the slower will disintegration of the resulting tablets take place; insoluble substances should therefore be compressed as lightly as possible. Unduly light pressure, on the other hand, is indicated by a greater tendency on the part of the material to stick to the faces of the punches. The pressure should be regulated so that the tablets may readily be broken in half by the fingers, though they ought not to break in pieces when dropped upon the floor. The splitting off of the surface of tablets—"capping" as it is termed—may be remedied by slightly damping the granulated material with water before compressing, or by reducing the pressure, or by altering the weight of the tablet.

The three main points in tablet making are (1) to regulate the pressure carefully, (2) to ensure proper cohesion of the particles of substance under compression, and (3) to prevent adhesion of those particles to any portion of the machine. The skilful dispenser, with his special knowledge of what is best to use in any given case as a pill excipient, will not find any difficulty in deciding whether gum acacia or tragacanth, syrup, dextrin, wax, mastic, or other adhesive agent should be employed. He will also be fully aware that some liquid which is not a solvent of the substance undergoing compression must be used to prevent adhesion to the dies, etc. To prevent adhesion to the dies a little powdered French chalk may be sifted into the material just before compression. White paraffinum molle (2 per cent. dissolved in sufficient ether) often facilitates the compression of a dry powder, and improves the appearance of the finished tablets if diffused through the granulated material, the latter being subsequently sifted and dried before compression. The rapid disintegration and solution of tablets is facilitated by adding finely powdered starch—from one-twentieth to one-tenth the weight of material—to the granulated substance ready to be compressed. On the other hand, liquid glucose, which should be diluted with 25 per cent. of water before use, renders tablets hard and tough, so that they will not readily disintegrate. That is frequently an advantage when it is desired that the tablets should dissolve slowly in the mouth.

Preparation of the Material.

The material to be compressed should be in a finely granular form. If in a very fine state of subdivision, it cannot be compressed satisfactorily into uniform and well-finished tablets. In such a case the fine powder must be granulated by moistening it slightly, by means of a spray, with water, alcohol, or ether. The granular product obtained by grinding crystals represents the condition which should be aimed at, powdered ammonium chloride and potassium chlorate, as supplied in commerce, being good examples of what is required. But in many cases it will be found necessary to reduce the substance to fine powder first, and granulate afterwards. In dispensing small quantities of any powder, the material may be obtained in the desired condition by simply damping with water, alcohol, or ether, by means of an atomiser, or by rubbing it up with a little powdered soap, and afterwards passing through a No. 20 sieve before feeding it to the machine.

With larger quantities of material, cane sugar and powdered gum are usually added, the former being preferable, since tablets prepared with it disintegrate more rapidly. Coblentz recommends the addition to the substance to be granulated of one-tenth its weight of cane sugar and one-twentieth its weight of gum, but on the large scale white dextrin may often replace the gum. Tablets made with sugar as an adhesive are much more soluble than those made with gum acacia or a mixture of gum acacia and sugar, while, as already stated, glucose serves the purpose better when a hard tablet is desired. After thoroughly mixing the adhesive substance with the medicament, sufficient water should be added to render the powder of such consistence that it can readily be shaken through a No. 12 sieve, without sticking to it or clogging the openings. Care should be taken to add the water in small quantities at a time, and to mix thoroughly after each addition. The powder is next passed through a No. 20 sieve and dried, after which a lubricant must be added to enable the particles of powder to move freely over each other and prevent them sticking to the dies and punches.

The Use of Lubricants.

Finely powdered French chalk (talcum), lycopodium, powdered boric acid, or an odourless hydrocarbon oil (liquid paraffin) may be employed as a lubricant, but the better the granulated material has been dried the smaller will be the quantity of lubricant required. According to Coblentz, ten to twelve drops of liquid paraffin, added by means of a spray, is usually sufficient for each pound, French chalk, not exceeding one-fortieth the weight of material, being added after the oil. If, however, the tablets are to be dissolved boric acid should be used as the lubricant, clear solutions being thus obtainable, though in many cases such an addition would be undesirable, as in the case of mercuric chloride, with which chemical action would take place. When the lubricant added is a powder, it should be scattered over the material spread out on paper, and the whole then lightly shaken up in a bottle. By that means the granules are not broken down, and they become coated very thinly with the lubricating powder. But it is above all things necessary that the operator should be familiar with the nature of the substance or mixture to be compressed, as that must to a great extent guide him in selecting a suitable granulating medium and lubricant. The operator must learn the nature of each article that he wishes to compress, and take advantage of his knowledge of its solubility in different menstrua. When the opposite nature of the different articles in a combination precludes the use of such knowledge, he must fall back upon such correctives as experience suggests, to meet the particular case.

The Choice of a Lubricant.

Powdered French chalk used as a lubricant should have been previously purified by adding to it five times its weight of boiling water, then one-tenth its weight of hydrochloric acid, and boiling the mixture for fifteen minutes. On subsiding, the powder should again be boiled with five times its weight of water, with the addition of one-twentieth its weight of hydrochloric acid, after which it should be well washed with water until free from all traces of acid. The proportion of dried purified talcum used as a lubricant should not exceed 3 per cent. of the material to be compressed. It should be mixed with the material after granulation and drying, being stirred in by means of a spatula. If white soft paraffin be the lubricant employed it should be dissolved in ether, a 2 per cent. solution being sprayed on the dry material before compression by means of an atomiser, and a spatula being subsequently used to stir the mixture, in order to allow the ether to evaporate. Sometimes, however, the use of ether is objectionable, on account of its solvent action on the material to be compressed, and liquid paraffin should then be employed, a few drops being well mixed with a portion of the material, after which the rest of the medicament may be added. In some cases, as already stated, it is useful to employ both talcum and solution of soft paraffin. The latter should then be applied first, the talcum being added after the ether has evaporated. Boric acid is less satisfactory as a lubricant than powdered talcum, and the proportion used should not exceed 2 per cent., but if it be desired to prepare tablets which shall be completely soluble in water the use of boric acid is essential. In any case the material to be compressed must be dry before attempting to compress it, or it will adhere to the dies, fail to feed regularly, and compress unevenly. It should also be noted that, in order to be able to produce perfect tablets, the operator must have had considerable experience, whilst possessing a practical knowledge of the capabilities of the particular machine used, and thoroughly conversant with the special treatment required by different substances or mixtures. Details regarding the methods of procedure to be followed in the case of the chief medicaments which are usually dispensed in tablet form will next be given, the information having been compiled from various sources, including the writings of Coblentz, McFerran, Remington, Edel, and other pharmacists.

(To be continued.)

REVIEWS AND NOTICES OF BOOKS.

'The Absolute Atomic Weights of the Chemical Elements and Demonstrating the Unity of Matter.' By G. D. Hinrichs, M.D., LL.D. Price one dollar. Carl Gustav Hinrichs, St. Louis, Mo., U.S.A., 1901.

The unity of matter is a subject which has received a great deal of consideration in the past, and is likely to be much discussed in the future. In any case it must be regarded from all sides in an impartial and an academic spirit. The author spoils his case, for which much may be said, by vituperation of distinguished chemists of the past and of the present. The conception of matter, it may be presumed, will generally be a matter of opinion as advanced by one school or another, but theories are not rendered more acceptable by the *argumentum baculinum* when applied to those holding views based on results obtained by the most famous chemists of their period. The author is a worshipper of Berzelius, and will not bow the knee to Stas and his school, or to the Smithsonian Institution. It is said that "our modern chemists, under the leadership of Stas, have corrupted chemical science by their assumption of a perfection and exactness in experimentation that existed necessarily only in their own imagination; as a result, the atomic weights actually in use for years are all false, contrary to Nature . . ." This is the author's text, and he labours to show that "the chemist will calculate the atomic weights with two or even more decimals when a simple examination would have convinced him that these decimals have absolutely no value whatever, being far beyond the limit of precision of his chemical work? To a great extent this may be true. Chemical memoirs certainly contain instances corroborating the author's contention in this respect, in which results have been based on pseudo-refinement in chemical operations which are more matters of inference or of a quotential significance than of common sense.

The author further maintains that the atomic weights of all elements are quite near whole numbers if we take oxygen as 16 exactly. In a few cases, as for copper and chlorine, the atomic weight approaches the exact half-unit. Prout's original hypothesis that the atomic weights of the elements are multiples by whole numbers of the atomic weight of hydrogen, now regarded as having been disproved by Stas, may or may not eventually be again accepted, as more light is obtained as to the individuality of the so-called elementary bodies. For practical purposes in ordinary chemical operations it would save labour, certainly, if the attempted refinement as to atomic weights were disregarded in works for the practical chemist and pharmacist. With oxygen as 16, most of the elements dealt with in the routine of chemical work might be represented with sufficient accuracy by whole numbers, or in some cases to one decimal place, which would avoid needless calculations, and the official tests required by the pharmacist would be unencumbered by the doubtful value of the atomic weights to the second place of decimals. The Committee of the German Chemical Society—Landolt, Ostwald, and Seubert—in their report on atomic weights, have made an advance in this direction by fixing the atomic weight of oxygen as 16 and hydrogen as 1·01. This suggestion has the advantage of retaining many of the old atomic weights, such as P 31, Fe 56, As, Hg 200·3, as against the B.P. figures 30·8, 55·6, 74·5, 198·8, and oxygen 15·88, in which hydrogen is taken as unity. In the next British Pharmacopœia an attempt might be made in the same direction, for the atomic weights at present in use in the official work are a constant source of unnecessary irritation to the practical chemist in testing pharmaceutical products. Dr. Hinrich's book is not unworthy of attention if allowance is made for the personal animus which prevails in it.

'Quain's Dictionary of Medicine.' Edited by H. Montague Murray, M.D., F.R.C.P., assisted by John Harold, M.B., B.Ch., B.A.O., and W. Cecil Bosanquet, M.A., M.D., M.R.C.P. Third edition. Pp. i.-xviii., 1 to 1,892. Price 21s. net. London: Longmans, Green and Co. 1902.

The first edition of this important work of reference appeared in 1882 and the second, in two volumes, in 1894. The third edition is published in one volume, substantially bound in buckram, and seems likely to prove no less valuable than its predecessors as a reliable and readily available work of reference. The new editor has been assisted by two very capable colleagues and a staff of nearly three hundred contributors, the mere enumeration of whose names would suffice to prove that no pains have been spared to bring the information on each subject treated thoroughly up to date. According to the preface, the general scheme of the book has been preserved, and the special emphasis laid by the late Sir Richard Quain on the diagnosis and treatment of disease has been maintained, but the pathology and ætiology have been very carefully considered and revised, while some departure from the original plan has been deemed advisable. Thus, many articles not in accord with the special object of the work have been omitted and repetitions have been as far as possible excluded, with the result that it has been found practicable to include a large number of new articles, to re-write many others, and yet to publish the 'Dictionary' in a single volume, in which surgical matters and "special branches" receive adequate recognition. The addition of numerous cross references also adds largely to the utility of the work. Twenty-one full-page plates, fourteen of which are coloured, illustrate the articles on bacteria, morbid appearances of the blood, cerebral abscess and cerebral hæmorrhage, tumours of epithelial type, malarial parasites, ophthalmoscopic appearances, pachymeningitis hæmorrhagica and general paralysis, painful areas in visceral disease, regional anatomy of the trunk, the spectra of pigments, sections of the spinal cord, tumours of connective-tissue type, and urinary deposits. Among the articles in which many pharmacists will be specially interested are those on antiseptics, etc., by Dr. W. D. Halliburton; antiseptic treatment and aseptic surgery, by Mr. J. R. Godlee; acids, alkalies, antispasmodics, etc., by Sir T. Lauder Brunton; bacteria, by Dr. D. A. Welsh; diseases of the eye, by Mr. R. Brudenell Carter; hypodermic medication, by Dr. Andrew S. Currie; mineral waters, by Sir Hermann Weber; poisons and poisoning by aconite, arsenic, conium, strychnine, etc., by Dr. Thomas Stevenson; diseases of the teeth, by the late S. J. Salter and Mr. C. S. Tomes; and standardisation, by Dr. Frederick Willcocks. The temptation is great to refer to many other interesting articles in this remarkabe volume, but it must suffice to state that no subject of importance in connection with the prevention or cure of disease fails to receive due attention at the hands of one or more of the highly-accomplished editorial staff.

'First Aid to the Injured and Sick.' By F. J. Warwick, B.A., M.B., M.R.C.S., L.S.A., and A. C. Tunstall, M.D., F.R.C.S. Seventh thousand. Pp. 232. Price 2s. 6d. Bristol: John Wright and Co. 1901.

Though there are several excellent text-books on the subject of which the authors treat, they recognised the want of a concise, illustrated work, and the result was the present book, of convenient size for the pocket. The fact that it has now reached the seventh thousand proves that its original publication was justified, and its merits should be known to all readers of the Journal who require, or are asked to recommend, an accurately-written work on "first aid." The first part of the book gives the requisite anatomical and physiological facts, while the second and greater part includes carefully detailed information regarding the application of bandages, the treatment of wounds, poisoning cases, etc., and the transport of the sick or injured. The illustrations exceed one hundred and fifty in number.

'Poison Romance and Poison Mysteries.' By C. J. S. Thompson, F.R.Hist.S. New and revised edition. Pp. 295. Price 2s. 6d. London: The Scientific Press. 1902.

This is an enlarged and cheaper edition of a work which appeared originally three years ago. In the present edition the author has introduced several new chapters, in which he gives detailed accounts of the "Horsford case," the "Lambeth poison mysteries," and the Molineux case, in which an American lady was poisoned by cyanide of mercury which had been added to a bottle of "Bromo-seltzer." The book is well printed and neatly bound in a tasteful cloth cover.

'Pye's Elementary Bandaging and Surgical Dressing.' Revised by Thos. Carwardine, M.S., M.R.C.S. Ninth edition. Pp. 214. Price 2s. Bristol: John Wright and Co. 1901.

This is too well-known a book to require a detailed notice, but it may be stated that its revision has not been allowed to interfere with the scheme of the original author, though many necessary alterations and desirable additions have been made, including numerous changes in the illustrations, of which the book contains nearly a hundred. The first section treats of bandages, splints, etc.; section two of the simpler ways of dressing wounds, burns and scalds; and section three of "first aid" treatment.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

Library, Museum, School, and House Committee.

Attendance in Library.

London.	Total.	Highest.	Lowest.	Average.
December	321	30	2	15
Year 1901	4,248	35	1	15

Circulation of Books.

	Total.	Town.	Country.	Carriage Paid.
London Library, Dec.	200	112	88	£1 0s. 8½d.
Do. **Year 1901**..	**2,247**	**1,294**	**953**	**£11 5s. 1½d.**
Edinburgh Library, Dec. ..	276	202	74	£0 6s. 2d.

Donations to the Library (London).

Sheffield Microscopical Society:—Transactions and Annual Report, 1900-1

Messrs. Baillière, Tindall, and Cox, London:—On the Composition Dutch Butter, by J. J. L. van Ryn, 1302.

Royal Institution of Great Britain:—Proceedings, 1901; List, 1901.

Geological Survey of Canada:—Catalogue of Canadian Birds, Part I., 1900.

Royal Dublin Society:—Scientific Transactions, series 2, vol. 7, Nos. 8-13; Scientific Proceedings, new series, vol. 9, parts 3-4.

Ecole Supérieure de Pharmacie de Paris:—Thèses par MM. Ecalle, Thibault, Guillard et Feuilloux.

Université Libre de Bruxelles:—Rapport sur l'Année Académique, 1900-1.

Mr. R. Bremridge:—Year-Book of Pharmacy, 1901. Two copies.

British Pharmaceutical Conference:—Year-Book of Pharmacy, 1901. Two copies.

University of Durham:—Calendar, 1901-2.

Surgeon-General U.S. Army:—Index-Catalogue of Library, 2nd series vol. 6.

Donation to the Library (Edinburgh).

British Pharmaceutical Conference:—Year-Book of Pharmacy, 1901.

Purchase of Books.

The Committee authorised the purchase of the under-mentioned books:—

For the Library in London.

Lewkowitsch, Laboratory Companion to Fats and Oils, 1901.

Green, Manual of Botany, 2nd edition, vol. 2. Two copies.

For the Library in Edinburgh.

Green, Soluble Ferments and Fermentation, 2nd edition.

Donations to the Museum (London).

Mr. E. S. Peck, B.Sc., Cambridge:—Specimen of *Lachnanthes tinctoria*, Ell.

Mr. J. H. Hart, F.L.S., Trinidad:—Specimens of Canella bark with the periderm attached.

Messrs. Lambert and Strong, London:—Specimen of Tonga bark.

To the Herbarium.

Dr. O. Sullivan Beare, Pemba:—Specimen of *Cassia beareana*, n.sp.

Attendance at Museum.

	Total.	Highest.	Lowest.	Average.
December	339	28	2	15
Year, 1901	3,270	36	1	12

Applications for duplicate specimens of false Jaborandis had been received from the Schools of Pharmacy of Paris and Algiers, and for the loan of specimens illustrating the tea industry from Mr. J. Lowson; also for the loan of the type specimen of *Strophanthus nicholsoni* from the curator of the Botanical Museum at Berlin, Dr. E. Gilg.

Examinations in London.

January, 1902.

MAJOR EXAMINATION.

Candidates examined 10
„ failed 8
„ passed 2

Cole, William Parmiter; London.
Thompson, Frederick William; London.

MINOR EXAMINATION.

Candidates examined 268
„ failed 204
„ passed 64

Ashforth, Frank P.: Corbridge
Baker, Oliver: Leeds
Banks, Sydney Joseph; St. Neots
Bound, Wm. S.; Llandrindod Wells
Brazier, Wilfrid N.; Stourbridge
Brearley, Samuel Edward; Bromley
Bridger, Fredk. W.; Eastbourne
Britland, Arthur J. D.; Penzance
Cannon, Herbert Henry; Hammett
Clarke, William Fox; King's Lynn
Cocking, Thomas Tusting; Sheffield
Crompton, Harry Grundy; Preston
Day, William George; Windsor
Derry, Alfred; Wadebridge
Dobson, Ernest John; Deal
Downing, Eldred P.; Hunstanton
Earlam, Ernest; Frodsham
Evans, David Albert; Narberth
Exell, Arthur; Sheffield
Farr, Francis William; Yaxley
Finlayson, Daniel; Dunfermline
Goss, John Osborne; Plymouth
Gresswell, Charles S.; Portsmouth
Griffiths, John; Lampeter
Halstead, Halsey C.; Manchester
Hannay, Thomas; London
Harrington, Arthur H. A.; Walsham-le-Willows
Higgins, Frederick S.; London
Hodgson, John W.; Lancaster
Hopkins, C. A.; Merthyr Tydvil
Hunt, George Paul Allen; Ipswich
Jones, Robert Ward; Louth
Lacey, Edgar Hiram; Clapham
Layland, John; Wrightington
Lewis, Harry; Poole
Lowe, John Hadfield; Blackpool
Lunt, Godfrey F.; Manchester
McCabe, Aubrey Joseph; Croydon
Machin, Harold; London
Mannox, Margaret M.; Birmingham
Mansbridge, William A.; Bristol
Matthews, William; Cirencester
Neill, Ernest A.; Cheadle Hulme
Passmore, Samuel H.; South Molton
Pearce, Robert Edgar; New Quay
Pitchford, William Thomas; Bristol
Purdy, Ernest Gibson; Leeds
Rice, Thomas James; Birmingham
Robinson, Emil; Whitchurch
Robinson, James Stacey; Blyth
Sampson, Howard Alfred C.; Barnet
Sharp, James Alexander; Bristol
Shearer, John A.; Aberdeen
Shuttleworth, J. H.; Gainsborough
Smith, Harold Saunders; Horsham
Stiles, Percy Charles G.; St. Ives
Taylor, Herbert W.; Kensington
Vibert, Samuel Howard; Totnes
Walker, George T.; Birmingham
Wardle, Arthur H.; Maidenhead
Westlake, Ethel Maude; Windsor
Williams, William N. P.; Holywell
Willox, Leonard S.; New Pitsligo
Woodward, Henry K.; Halifax

Certificates by approved examining bodies were accepted from the undermentioned persons desirous of being registered as Apprentices or Students:—

Abernethy, James; Turriff
Barritt, Edward; Dalston
Charnock, Arthur; Halifax
Colley, Walter H.; Birmingham
Cooper, Charles Hook; London
Davies, Harold; Nottingham
Dowty, John; Pershore
Edwards, J. McConnochie; London
Fair, Edward William; East Linton
Fielding, Michael Angelo; Cork
Fowler, Alfred; Smallheath
Gale, Ralph G.; Bournemouth
Gallagher, Ernest E.; Seacombe
Geddes, John; Maidstone
Knowles, Edward C.; Rotherham
Lawman, Frederick A.; Brighton
Matthews, Geoffrey Tom; Ross
Modine, James Arnold; Southwark
Moffat, Percy Wreford; Yeovil
Parsons, Frederick T.; London
Richard, Richard Walton; London
Seymour, Harry William; Alford
Spicer, William S.; Wareham
Stephens, F. McKenzie; Plymouth
Stratford, Nora Martina; Bicester
Symons, Charles Ewart; Camborne
Thomson, Peter J.; Cullen
Wetherall, J. F. E.; Ashton-u-Lyne
Wilson, John; Leamington
Woolley, Samuel L.; Devonport

PHARMACEUTICAL SOCIETY OF IRELAND.

Examinations in Dublin.

January, 1902.

PRELIMINARY EXAMINATION.

Candidates examined 21
„ failed 10
„ passed 11

Bennett, T. H. H.
Brabazon, T. H.
Campbell, R. E.
Carmichael, C.
Courtney, R.
Doohan, W. P.
Gamble, A. M.
Harpur, W. E.
Combe, A. Mc.
Marron, J.
Orr, R. H.

PHARMACEUTICAL LICENSE EXAMINATION.

Candidates examined 17
„ failed 12
„ passed 5

Angley, F. B.
Cuttiford, W. F.
Kennedy, W. M.
Large, F. C.
Wilkinson, G. G.

PRACTICAL NOTES AND FORMULÆ.

Worm Remedies for Horses.

(1) Powdered areca nut, 310 grains. To be given in one dose and to be repeated for two or three days. (2) Tartarated antimony, 230 grains; powdered absinth herb, 3 ounces. Mix and divide into four powders, or mass into four balls with meal and water, and give one every hour. (3) Calomel, 155 grains; powdered Cape aloes, 310 grains; powdered tansy herb, powdered gentian, of each 3 ounces. Mix and divide into four powders. One powder to be given twice a day.—*Pharm. Centralh.*, **42**, 692.

Antidote to Cyanide Poisoning.

Hydrogen peroxide has been used for some time in some gold mining districts for cases of cyanide poisoning, and the results are spoken of favourably. The solution is freely used in washing out the stomach, and a 3 per cent. solution is injected subcutaneously. The treatment must be very promptly applied.—*Spatula*, **8**, 86.

Iodine Leaf, or Paper Plaster.

L. Tixier has devised an ingenious method for the local application of iodine as a counter-irritant. It consists of two sheets of filter paper, one saturated with a solution of potassium iodide and iodate, and dried, and the other with potassium acid sulphate. When these are moistened and applied to the skin a considerable amount of iodine is liberated. The papers are thus prepared: Iodine, 50 Gm., and caustic potash solution (sp. g. 1·336), 80 Gm., are heated together, evaporated to dryness, then made up to 500 Gm. with distilled water, filtered, and the solution kept in a well-closed yellow glass bottle. The acid solution is made by dissolving potassium acid sulphate, 1; in distilled water, 8. Similar sizes of filter paper are immersed in these solutions and dried separately at a gentle heat. When dry a sheet of plain filter paper is laid between each iodide and acid paper, and the three sheets fastened together with a mixture of paraffin oil, 2; prepared chalk, 2; resin, 1; oil of turpentine, 1. The sheets are then wrapped in gutta-percha tissue to keep them from the damp. Before applying, the sheet is moistened in a plate of water, drained, and applied to the skin over the affected part, and covered with oiled silk, or bound on with a bandage. The application for fifteen minutes has the same effect as a mustard leaf; applied for twenty-five minutes the result is equal to two or three paintings with tincture of iodine; for twenty-five to forty-five minutes the effect is that of thapsia plaster or strong iodised wool. In one hour the action is vesicant. The slight pain occasioned by the application disappears in ten minutes after the removal of the papers.—*Pharm. Centralh.*, **42**, 582.

Hermophenyl Injection.

Lesque prepares a hypodermic solution of hermophenyl by dissolving 5 centigrammes in 10 C.c. of water. Of this solution, 4 C.c., or 2 Cgm. of hermophenyl is injected hypodermically in the same manner as an ordinary hypodermic injection. It is found that nothing is gained by deep intramuscular injection with this solution. The liquid as at first prepared is slightly turbid, but it becomes clear on standing for twenty-four to forty-eight hours. It is employed for syphilis.—*L'Union Pharm.*, **42**, 538.

LETTERS TO THE EDITOR.

Interaction Between Magnesium Sulphate, Phenazone, and Sodium Salicylate.

In reply to Mr. J. P. Gilmour's request for confirmation upon the interaction between magnesium sulphate, phenazone, and sodium salicylate, I beg to state that I was called upon to dispense a very similar mixture, viz.:—

℞ Sodii salicylatis	ʒiii.
Phenazone	ʒi.
Tr. Aconiti	ɱxv.
Magnesii sulphatis	ʒi.
Aquæ chloroformi ad	ʒviii.

And upon the bottle being returned to be refilled it was found to contain, even as he states, a copious deposit of white prismatic crystals, accumulated on the bottom, and adhering to the sides of the bottle. Like himself I prepared four solutions, with which I obtained the following results:—

(1) Sodii salicylas + phenazone	no reaction.
(2) Magnesii sulph. + phenazone	no reaction.
(3) Magnesii sulph. + sodii salicyl.	no reaction.
(4) Magnesii sulph. + sodii salicyl. + phenazone	crystalline deposit.

It then became clear to me that the magnesii sulph. was the cause of this reaction, the deposit of which I analysed as far as it was possible for me to do with the reagents I had at hand, and what I considered to be salipyrine. I then, to make certain that I was right in my surmise, wrote our worthy Editor (who is ever ready to render aid), and he confirmed my conclusions, the result of which will be found in the *P. J.* of September 30, 1899.

London, January 14, 1902. J. H. Shuttleworth.

*** The facts are as stated by our correspondent, and a detailed account of the experiments performed at the time will be found at page 332 of the second volume of the *P. J.* for 1899.—[Ed., *Pharm. Journ.*]

A Curious Hypertrophy of the Orange.

A curious malformation of the ripe fruit of the sweet orange tree (*Citrus aurantium*, Risso) was shown to me by a friend the other day. The orange was purchased from a fruiterer's for consumption, and on my friend cutting it open preparatory to partaking of its juicy and refreshing contents, he was astonished to discover another one. The second, or included hesperidium, is attached to the parent axis, and lies near base of the larger or enveloping orange, in a cavity formed by the centrifugal displacement of several of the triangular divisions. The endocarpous strands project into the cavity. Of course, the smaller or included orange, owing to lack of space and from pressure from without, is dwarfed in development; otherwise it appears to be morphologically normal. I shall be pleased to hear if any reader of the *P.J.* has ever come across a similar abnormal type.

London, January 13, 1902. G. Pinchbeck, Ph.C.

The Distillation of Water.

With such cases as that of Mr. William Fairs, with regard to lime water before us (*vide P.J.*, January 11), it becomes more and more an imperative necessity that chemists should distil their own water, and that they should not rely for this on unseen operations. As I prefer to plead ignorance as regards the express law in this matter of distillation, I should like to know how a chemist can avoid the Excise licence in this respect, and what form of still, well within the range of the average pharmacist's means and requirements, you would recommend one to employ simply for aqueous distillation?

Embsay, January 13, 1902. F. Dickins.

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply.

Misuse of Title (W. L.—69/13).—You should send particulars of any such illegality to the Registrar of the Pharmaceutical Society.

American Pharmaceutical Association (G. A. H. S.—69/10).—The address of the General Secretary is 109, Aisquith Street, Baltimore, Md., U.S.A.

Lamps for Lupus (E. T. W.—69/8).—The method of treatment referred to is only in an experimental stage as yet, and we have no information on the subject.

Window Carboys (E. R.—69/11).—The carboys were probably used originally to display the spirits, essences, etc., sold by apothecaries, symbols being sometimes employed to indicate the nature of the contents.

Chemist in Works (J. H.—69/12).—You should begin by studying for the Institute of Chemistry examinations. Write to the Secretary of the Institute, 30, Bloomsbury Square London, for the necessary particulars.

Engine Oils (D. J. M.—69/7).—(1) It would require several pages of the *P.J.* to convey the information you ask for. Refer to Allen's 'Commercial Organic Analysis,' Vol. II., part 2. (2) Ordinary petroleum is usually mixed with colza oil for the purpose. (3) Hurst's 'Lubricating Oils, Fats, and Greases' (Scott, Greenwood, 10s. 6d.) may serve your purpose.

Petroleum (E. J. L.—69/5).—It is impossible to remove the odour completely, but it may be modified to some extent by shaking the oil with fresh chlorinated lime (25 Gm. to each litre). Subsequently add a little hydrochloric acid, transfer the liquid to a vessel containing ordinary lime, and again shake until all the chlorine has been absorbed. The deodorised oil may be emulsified by adding to it twice its volume of a boiling solution of soft soap (1 in 20) and agitating briskly.

INFORMATION WANTED.

Address.—Who are the successors of Messrs. Philipson and Co., Fancy Soap Manufacturers, formerly of Waterloo Road, London?—"E. T. W." (69/8).

Pharmaceutical Journal

SATURDAY, JANUARY 18, 1902.

A Copy of this Inset is inserted in every Copy of the *Pharmaceutical Journal* issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. The Inset can also be obtained by personal application, on the day of publication.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

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SALE AND EXCHANGE . Page 14

Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words or less, 6d.; two initials or two figures counting as one word.

SENIOR; outdoors; used to quick counter trade; qualified preferred.—GREEN & Co., Wholesale and Retail Chemists, 36, Lower Marsh, S.E.

WANTED, ASSISTANT, about 22 years old; middle of February.—Apply, with full particulars, age, salary, &c., enclosing photo, to J. HOLLIDAY, Chemist, Warwick.

WEST-END.—Wanted, competent DISPENSER, qualified, for high-class pharmacy.—Apply, stating full particulars, to A. P., c/o S. Maw, Son & Sons, 7, Aldersgate St., E.C.

JUNIOR ASSISTANT, indoors, for good-class Dispensing. —Apply, with full particulars, age, height, salary required, to H., c/o Messrs. Evans, Sons & Company, Hanover St., Liverpool.

A JUNIOR ASSISTANT wanted immediately; of gentlemanly appearance; a reliable Dispenser and good character; indoors.—Write, stating usual particulars and salary required, to JOHN KNIGHT, Pharmacist, Folkestone.

ASSISTANT wanted, indoors or outdoors, with not less than 4 years' experience; one with Photographic knowledge preferred.—Apply, with full particulars, age, height, salary, etc., to A. J. WING, Chemist, 69, Powis St., Woolwich, S.E.

LONDON, N.W.—ASSISTANT wanted; good all-round capable man, used to Cash business; with a knowledge of Photography preferred.—Apply, giving full particulars, salary required, experience, &c., PEMBERTON & MALCOLM, Willesden Green, N.W.

WANTED, qualified LADY CHEMIST to supervise the putting up of high-class pharmaceutical preparations. — In applying, full particulars of experience, age, and salary required must be given to L. C., Pharm. Journal Office, 8, Serle St., W.C.

Assistants Wanted—Continued

WALES.—Wanted immediately, an energetic young man as MANAGER in a Family and Dispensing Chemist's; Welshman preferred.—Apply, stating age, experience, reference and salary, DRACHMA, Pharm. Journal Office, 8, Serle St., W.C

DEAL.—Wanted, an ASSISTANT, about 23 (indoors), for a good-class Dispensing and Retail business on the South-east Coast.—Apply, stating age, height, salary and reference, with photo, if convenient, to J. GREEN, Pharmaceutical Chemist, 28, High St., Deal.

ANDOVER.—ASSISTANT wanted, for light Retail, Surgeons' Dispensing, and Agricultural business; short hours; weekly half-holiday; time for study if required.—Apply, with age, height, salary (indoors), &c., JOHN BIENVENU, Pharmaceutical Chemist, Andover.

INDIA.—Qualified (Minor) MAN wanted for Calcutta; age under 30; must be single, and have had experience in good houses; four years' agreement. Salary, first year, Rs.200 monthly; second, Rs.225; third, Rs.250; and fourth, Rs.300; passage paid both ways.—Apply, stating full particulars of qualifications, to GENTIAN, Pharm. Journal Office, 8, Serle St., W.C.

CAPE COLONY.—Wanted, good ASSISTANT, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £140; second year, £150; third year, £160; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, CAPE, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified ASSISTANT; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to STRAITS SETTLEMENTS, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

QUALIFIED; nine years' first class experience; 25.—CLOUTING, 97, Edridge Rd., Croydon.

PART-TIME; evenings from 7, Saturdays 4; West-end.—EXPERIENCED, 103, Ripple Rd., Barking.

DISPENSER to Doctor or Hospital; qualified; 23; tall.—DANIELL, Argyle Street, Stoke-on-Trent.

MANAGER; qualified; middle age; near London.—ALPHA, 6, Victoria St., Cwmbran, Monmouthshire.

DISPENSER; 3 hours daily; 21; 6½ years' experience; West-end.—FRANCIS, 142, Uxbridge Rd., W.

PART-TIME; London; qualified; highest references.—MINOR, Pharm. Journal Office, 8, Serle St., W.C.

QUALIFIED; 25; good experience; London preferred.—CHEMIST, Pharm. Journal Office, 8, Serle St., W.C.

ASSISTANT; qualified; 26; first-class experience.—HARDY, Junior, 99, Osborne Rd., Jesmond, Newcastle-on-Tyne.

ASSISTANT; unqualified; 30; good references.—Apply, W. N., Pharm. Journal Office, 8, Serle St., London, W.C.

LADY CHEMIST; highest references; experienced; desires appointment.—M. K. E., Pharm. Journal Office, 8, Serle St., W.C.

29½; Outdoor ASSISTANT; experienced, and reliable; extractor. — CHEMICUS, c/o Mr. Gilbert, Scorrier, Cornwall.

DOCTOR'S DISPENSER and BOOKKEEPER; experienced; qualified; single.—CHEMIST, 77, Bristol Street, Hulme, Manchester.

PART-TIME, to take Evening Classes for Minor, Junior; age 21; tall; 4½ years' experience.—D. MORRIS, Pentneff, Llanymynech, Oswestry.

UNQUALIFIED; good Dispensing experience; 23; 5ft. 10in.; where others kept preferred; disengaged.—C. A. R., 135, Ladbroke Grove, W.

QUALIFIED Lady DISPENSER (Hall certificate) disengaged; London experience; resident or otherwise.—L., Pharm. Journal Office, 8, Serle St., W.C.

ASSISTANT or LOCUM; qualified chemist and dentist, L.D.S., R.C.S.; town or country; good references.—M., c/o Mr. Jennings, Silverton, near Exeter, Devon.

EXPERIENCED Qualified DISPENSER desires Hospital or Doctor's appointment; unquestionable testimonials.—SMITH, c/o Rev. Morgan Smith, St. Peter's, Leicester.

LOCUM TENENS; days, weeks; moderate; reliable; engagements booked forward.—T. C. BEACH, M.P.S., Windsor Edge, Inchbrook, Stroud, Glos. Telegrams: Beach, Nailsworth.

Engagements Wanted—Continued

PHARMACEUTICAL CHEMIST seeks position as representative of good-class house in the Provinces; excellent references and first-class experience.—BETA, 8, Serle St., London, W.C.

PHARMACEUTICAL CHEMIST; 28; thorough experience manufacturing Pharmaceutical laboratory, London; good chemical ability; desires similar post.—M. R., 138, High Holborn, W.C.

CHEMIST of good standing, experienced in high-class Pharmacy, with toilet requisites, seeks MANAGERSHIP; character unimpeachable; highest references; disengaged.—M. P. S., 57, Oakfield St., Cardiff.

QUALIFIED DISPENSER, age 37, would give his services to small Institution at nominal salary (£10 to £20), and board, for light hours and duties; abstainer.—Address, W. E. F., 21, St. George's Terrace, Leeds.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Platinum Utensils and scraps for cash.—P. Rowsell, 9, Derwent Grove, Dulwich.

Herbarium and Materia Medica specimens, collection of, suitable Minor exam.—G. E. Ainslea, Scotstounhill.

Fernie's "Herbal Simples," second edition.—Particulars and price to A. R., Pharm. Journal Office, 8, Serle St., W.C.

OFFERED.

100 Idris A Ordinary, 26s.—P., 94, Taunton Rd., Lee, S.E.

"**C. & D.,**" 1902, posted Mondays. 5s.—Shaw, 42, Chapeltown Rd., Leeds.

Slides, second-hand, 4½d. each; Hand-painted photos; lists free.—T. Wing, Chatteris.

Water Bed, full size, good condition, cheap.—Apply, Cran Esslemont Avenue, Aberdeen.

50,000 choice Microscopical Objects; new and secondhand Microscopes.—Suter, Highweek Rd., Tottenham.

Perfume Ribbons, quarter inch wide, 36 yards long, post free, 1s. 6d. Blue, Pink, Green, Mauve, Crimson, Salmon (6 rolls, 7s. 6d.).—Edward Peck, East Dereham.

Bagatelle Board.—Very handsome best mahogany folding bagatelle board, 8 ft. long, quite new and completely fitted, with 9 real ivory balls, cues, indiarubber cushes, markers, rules, lock and key. Nice size for family use or reading room, etc. Only £3 12s. 6d.; worth £6 6s. Approval before payment.—Mr. P. Ralph, Cambridge House, Lakenheath, Suffolk.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows:—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

FOR Disposal, a good-class Dispensing and Retail BUSINESS, West-End; returns over £2,000 and increasing.—Full particulars on application to M.P.S., Pharm. Journal Office, 8, Serle St., London, W.C.

Under Deed of Assignment.]

BLACKFRIARS ROAD, S.E., within three minutes' walk of Blackfriars Bridge.

MESSRS. CRONK have received instructions from the Trustee under a Deed of Assignment, to Sell by Auction, at the Auction Mart, Tokenhouse Yard, E.C., on FRIDAY, January 24th, 1902, at Two o'clock precisely, the valuable LEASEHOLD SHOP and MANUFACTURING PREMISES, known as 58, Blackfriars Road, situated in the best part of this important thoroughfare, together with the goodwill of the old-established Business of Messrs. Powell and Barstow, Manufacturers of Surgical and Veterinary Instruments, Elastic Stockings, Speaking and Gas Tubing, Druggist's Sundriesmen, &c., and valuable Fixed Plant, Machinery, Engines, and Trade Fixtures.

It embraces an area on ground floor of about 1,300 superficial feet, and comprises a substantial building of four stories and a basement, with every accommodation for carrying on this profitable trade.

It is held on lease for a term of ninety-nine years, of which about 86½ years are unexpired, at the very low Ground Rent of £25 per annum.

The above will be sold as a going concern, and possession given on completion of the purchase.

Particulars and conditions of sale may be obtained at the Auction Mart, E.C.; of S. Cronk, Esq., Trustee, Chartered Accountant, 43 and 44, Lombard Street, E.C.; of Messrs. May, Sykes & Co., Solicitors, Suffolk House, Laurence Pountney Hill, Cannon Street, E.C.; and of Messrs. Cronk, Land Agents and Surveyors, 12, Pall Mall, S.W., and Sevenoaks, Kent.

Businesses Wanted

WANTED, a good-class Retail BUSINESS in small country town (Midlands preferred); must have good house attached. Capital £1,000.—Address, CORTEX, Southwell Bros. & Barclay, Birmingham.

A GOOD-CLASS Dispensing and Retail BUSINESS, yielding a nett profit of about £200; must bear full investigation. —State full particulars, which will be treated in strict confidence, ALPHA, 8, Serle St., London, W.C.

Apprenticeships

MESSRS. BROOM & REID, Chemists, Exeter, have a vacancy for a well-educated young gentleman, about 17, as pupil; very high-class business; Pharmaceutical classes same street.—Address, Mr. Reid, 2, Queen St.

Agencies.

AGENCIES of first-class firms in the Pharmaceutical branch (foods, specialities, cosmetic goods) wanted for Austria-Hungary; with consignments, if possible; part expenses essential, as advertiser's travellers cover the whole Empire.—Address, B. ROTHZIEGEL, Chemist, Rudolfsplatz 5, Vienna I., Austria.

Shop Fittings for Sale

PLATE-GLASS Shelves, polished edges, 3 ft. long by 20 in., 16 in. and 12 in. standard bars and brackets, complete £3 10s. Chemist's Side Fittings, from £1 foot run. Counters from 7s. 6d. foot run. Counter Cases from 7s. foot run. Dispensing Screen, 6 ft. long, £6 10s. Cheapest house for blinds, mirrors, shelves, lamps, and window fittings.—**TREBLE & Co.**, Complete Shop Fitters, **RECTORY WORKS, RENDLESHAM ROAD, CLAPTON, LONDON, N.E.**

CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

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PHARMACEUTICAL JOURNAL

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THE PUBLISHERS,

8, Serle St., Lincoln's Inn, London, W.C.

COMPANY INTELLIGENCE.

Liebig's Extract of Meat Company, Limited.—At a board meeting held on January 9 it was resolved to declare a half-yearly interim dividend of 5 per cent. (the same as last year) on the ordinary shares of this company, being 20s. per share, free of income tax, payable on and after February 15 next, to the proprietors of ordinary shares registered on the company's books on February 8, and to holders of ordinary share warrants to bearer.

Scotch Soda Manufacturing Company, Limited.—Registered on January 4, with a capital of £5,000 in £1 shares, to acquire the business of a soda manufacturer, etc., carried on by A. Cohen as the South London Scotch Soda Manufacturing Company, at Bombay Street Arch, Southwark Park Road, London, and to carry on the same and the business of chemical manufacturers, chemists, drysalters, drug and dyeware merchants, etc. No initial public issue. The number of directors is to be not more than seven; A. Cohen is the first managing director. Registered office: Bombay Street, Southwark Park Road, London.

Leas Pavilion (Folkestone), Limited.—This company was registered on December 27, with a capital of £15,000, in £5 shares. Object: To adopt an agreement with F. Ralph, and to carry on the business of hotel, restaurant, refreshment-room, café, tavern, billiard-room, etc., proprietors, safe deposits, innkeepers, chemists, wine, cigar and tobacco merchants, mineral water manufacturers and dealers, etc. No initial public issue. The first directors are A. Darney, S. Penfold, F. Ralph (chairman), C. J. Saunders, and G. I. Swoffer. Qualification, £250. Remuneration to be fixed by the company. Registered office, Bank Chambers, 27, Sandgate Road, Folkestone, Kent.

Camera Club Company, Limited.—This company was registered on December 28, with a capital of £4,000, in 6,000 10s. preference shares and 1,000 £1 ordinary shares. Object: To adopt an agreement with a company having a similar title (in liquidation) and the liquidators thereof; to provide a clubhouse with dark rooms, studios, workshops, photographic, scientific and mechanical apparatus, etc.; to form a library of photographic and scientific literature. No initial public issue. The first directors (to be not less than five nor more than twenty) are to be the directors of the old company. Qualification, ten preference shares. No remuneration. Registered office, 28, Charing Cross, W.C.

Vinolia Company, Limited.—The annual report of this company for the year ending August 31 last shows a net profit of £20,016. Of that amount £2,500 is to be placed to reserve, as compared with £5,000 the previous year, but £1,500 has been written off Consols. A dividend of 8 per cent. is recommended on the ordinary shares and 5 per cent. on the preference shares. The directors explain that the profits would have been greater but for the exceptionally high prices of raw materials and certain special expenses; it is thought, however, that the present high prices cannot be permanent. A New Year's dinner was given on Saturday, January 4, by the Chairman of the Vinolia Co., Limited, to as many of the employees of the company as the King's Hall, Holborn Restaurant, would hold. Over 600 members of the staff (which was not all present) sat down to dinner, which consisted of eight courses. The "Bijou" Orchestra played during the dinner, after which there was violin and vocal music by professional talent, and toasts. The Chairman and Mrs. Burrows shook hands with all the people, who had presented two very beautiful bouquets and a large basket of fruit to Mrs. Burrows. In the toast of "Absent Friends" the names of something like a score of foreign representatives were mentioned. The Chairman, in replying to the toast of his health, which had been enthusiastically received with musical honours, said that this autumn's business had been the best the company had ever had, and the prospects were never better. His advice to those who were present was to always try and identify themselves with successful houses, and to keep in successful channels, because that is where success is; also to try at all times to fit themselves for whatever came in the way. He regarded the employees of the company as his friends, and wished them to remember that he was willing to see anyone of them at any time, and they could rest assured that if their matter could not have attention at the moment it would have it as early as possible. In speaking of the quality of the company's manufactures, he stated that it was significant that in no single district in London was there such a demand for Vinolia products as in the near vicinity of their works, where their employees resided. He wished them with all his heart a very Happy New Year. The company present dispersed at 10 o'clock, after having spent a very pleasant evening. Afterwards there was a special gathering of some of the company's travellers. The number of representatives in the employ of the company is between seventy and eighty.

Homocea, Limited.—An extraordinary general meeting of Homocea Limited, was held on January 8, at Winchester House, Old Broad Street, E.C., for the purpose of receiving the resignation of the present directors and appointing a new board. The Chairman, Mr. G. D. Jennings, having explained the reason for the resignation of the directors, a long discussion ensued, which resulted in the shareholders accepting the resignation of the present board, and appointing the following new directors: Messrs. Hooper, Wann, and Bowden.

SCHOOL AND COLLEGE NEWS.

Metropolitan College of Pharmacy.—At the recent sessional examinations held at this college, the following gentlemen were the successful students in gaining the medals:—Silver medal of the session, Mr. A. H. A. Harrington; bronze medal in dispensing, Mr. S. Burden; bronze medal in chemistry, Mr. S. H. Vibert; bronze medal in botany, Mr. T. T. Cocking; bronze medal in pharmacy, Mr. T. J. Rice; bronze medal in materia medica, Mr. D. W. Lyall.

The Square Football Club had quite a friendly game on Saturday last. The two divisions of the school—Minors *v.* Majors—turned out their respective best elevens, with the result that the Minors, if not so advanced in work, showed themselves quite superior in sport. They returned victorious with five goals to four. It is to be hoped that most—if not all—of the Minor students will return next year to the Major course, and if such good luck should favour the Square, there is little doubt that the team will have a good chance of retaining the coveted cup now so well in sight.

School of Pharmacy.—The annual dinner of the School will be held on Monday, February 3, at 7 p.m., in the Royal Venetian Chamber at the Holborn Restaurant. The Dean of the School (Prof. J. Reynolds Green, F.R.S.) has consented to take the chair, and the President of the Pharmaceutical Society of Great Britain has kindly promised to be present. The Committee hopes that this gathering will be as representative as possible, and that a large number of past and present students and friends will find it convenient to be present. The price of the tickets is 5s. each, and applications should be addressed to Messrs. Hills and Neathercoat, Hon. Secs. Dinner Committee, 17, Bloomsbury Square, London, W.C.

PERSONALITIES.

Mr. John H. Aplin, chemist and druggist, Trowbridge, was installed W.M. of the Lodge of Concord, No. 632, on Monday, January 13.

Mr. T. H. W. Idris, L.C.C., of the firm of Idris and Co., Ltd., is now on a voyage to South Africa. He started from Southampton on December 28 last and is returning by the East Coast route through Egypt.

Dr. Constantin has recently been appointed Professeur de Culture in connection with the Museum d'Histoire Naturelle at Paris, in the place of Professeur Maxime Cornu, lately deceased. Professor Cornu was a corresponding member of the Pharmaceutical Society of Great Britain, and was able often to communicate valuable botanical information concerning medicinal plants in French Colonies to the Curator of the Society's Museum.

REGISTRATION OF TRADE MARKS.

Instruction for Registration.

Application for the registration of a trade mark must be made on Application Form F, which costs five shillings, and can be obtained through any money-order office. The form contains general instructions for making the application, and, after being filled up, must be posted to the Comptroller, the Patent Office (Trade Marks Branch), 25, Southampton Buildings, London, W.C. If the mark applied for is one which can be accepted for registration, the applicant must next fill up the Registration Form I, which costs one pound, and can also be obtained through any money-order office. That form must also be sent to the Comptroller, when the mark will be advertised in the *Trade Marks Journal*, after which it will be duly registered if not opposed. A renewal fee of one pound must be paid by the proprietor of a trade mark every fourteen years.

Recent Application for Trade Marks.

From the Trade Marks Journal, January 15, 1902.

Class 1.

Semicolon.—242,159. Chemical Powders for Saving or Minimising the Consumption of Coal. Hill Brothers, Foss Islands Leather Works, James Street, York; Tanners and Curriers.—November 21, 1901.

Boilerine.—241,980. A Compound for Preventing Incrustation in Boilers. James Ross, National Boiler Works, Old Kent Road Railway Station, London, S.E.; Engineer and Boiler Maker.—November 14, 1901. No claim is made to the exclusive use of the word "Boiler."

Frewil.—242,197. A Wood Stain. Frederick Willis, 44, Sunnyhill Road, Streatham, London; Picture Frame Maker.—November 22, 1901.

Antisaptic.—242,654. A Chemical Compound for Hardening and Preserving Wood; also an Anti-corrosive. T. A. Mackenzie and Co., 16, Billiter Buildings, Billiter Street, London, E.C.; Paint Manufacturers.—December 13, 1901.

Class 2.

Prositas.—242,495. Disinfectants. Adolf Gates, trading as the Cottonia Soap Works, 9, Andrews Road, Hackney, London; Manufacturer.—December 4, 1901.

Class 3.

Shamrock.—241,874. Embrocation for Human Use. Mary Scott King, the Lawn Weedon, Northampton; Certificated Medical and Surgical Nurse.—November 9, 1901.

Borobenphene.—242,068. Medicines for Human Use. The Henry Heil Chemical Company, 212 to 214, South Fourth Street, St. Louis, Missouri, United States of America; Importers, Manufacturers, Jobbers and Exporters of Chemical Apparatus and Chemicals.—November 18, 1901. Address for Service in the United Kingdom, care of W. Lloyd Wise, 46, Lincoln's Inn Fields, London, W.C. No claim is made to the exclusive use of the word "Boro."

Pilette.—242,460. Medicine for Human Use. John Mumford, 5, Catherine Court, Seething Lane, London, E.C.; Commission Agent.—December 4, 1901. No claim is made to the exclusive use of the word "Pile."

Carlsvich.—242,631. Chemical Substances Prepared for Use in Medicine and Pharmacy. Lawrence Thomas Ashwell, Hazelwood, Warlingham, Surrey; Chemist and Druggist.—December 12, 1901.

Class 4.

Lithol.—241,900. All Goods included in Class 4. The Badische Anilin and Soda Fabrik, Friesenheimer Landstrasse, Ludwigshafen-on-Rhine, Germany; Manufacturers of Alizarine, Aniline Dyes, Chemicals, etc.—November 11, 1901. Address for Service in the United Kingdom, care of Johnsons and Willcox, 47, Lincoln's Inn Fields, London, W.C. No claim is made to the exclusive use of the word "Litho."

Class 11.

Jasmine.—241,200. A Catamenial Appliance (not Medicated). Daisey Paul Sonnehill, 83 and 85, Wooster Street, New York City, County and State of New York, United States of America; Manufacturer of Catamenial Appliances.—October 10, 1901. Address for Service in the United Kingdom, care of A. M. and Wm. Clark, 53, Chancery Lane, London.

Silvinium.—242,372. Instruments, Apparatus, and Contrivances, not Medicated, for Surgical or Curative Purposes, or in Relation to the Health of Men or Animals. Charles George Granger Ablitt, 34, Womersley Road, Crouch End, London; Manufacturer.—November 30, 1901.

Class 47.

Norlite.—241,838. All Goods included in Class 47. Ebenezer Norman, trading as Norman's Cash Stores, 41, Robert Street, Hampstead Road, London, N.W.; Oil and Colourman.—November 8, 1901. By Consent.

Class 48.

Eleksildidum.—241,717. A Toilet Preparation. Agnes Medhurst, Cottesmore, Oakham; Ladies' Maid.—November 1, 1901

Jean Stehr.—242,004. Perfumery (including Toilet Articles, Preparations for the Teeth and Hair, and Perfumed Soap). The Firm trading as Jean Stehr, 235, Oxford Street, London, W.; Court Hairdressers.—November 15, 1901.

Streamlet.—242,336. Perfumery (including Toilet Articles, Preparations for the Teeth and Hair, and Perfumed Soap). Vinolia Company, Limited, Malden Crescent, London, N.W.; and Lea Bank Soap Works, Carpenters Road, Stratford, Essex; Manufacturing Chemists, Perfumers, Soap and Candle Makers, and Glycerin Distillers.—November 29, 1901.

E. C. Conrad.—242,425. All the Goods included in Class 48. Edwin Charles Conrad, Walton Villa, Wrotham Road, Gravesend; Fellow of the Chemical Society, Manufacturer of Tooth Powders, Shaving Soaps, etc.—December 3, 1901.

Parozone.—242,771. Toilet Soap. The Parozone Company, Limited, 11, Bothwell Street, Glasgow; Manufacturers.—December 19, 1901.

NOTES IN PARLIAMENT.

The Third Session of the present Parliament, and the second of the reign, was opened by the King in person on Thursday. His Majesty was accompanied by the Queen, and the scene in the Lords was picturesque and impressive.

The Speech from the Throne alluded in optimistic terms to the prospective conclusion of the war in South Africa, and to our foreign relations. On the subject of the Sugar Bounties it contained this passage: "On the invitation of the King of the Belgians an International Conference on Sugar Bounties has recently reassembled at Brussels. I trust that its decision may lead to the abandonment of a system by which the sugar-producing colonies and the home manufacturers of sugar have been unfairly weighted in the prosecution of this most important industry." Allusion was made to the fact that His Majesty had concluded with the President of the United States, a Treaty, the provisions of which will facilitate the construction of an interoceanic canal under guarantees, that its neutrality will be maintained, and that it will be open to the commerce and shipping of all nations.

As to the Estimates, the Speech rather significantly stated that these had been framed "as economically as a due regard to efficiency renders possible in the special circumstances of the present exigency."

The Programme of legislation which the Speech indicated is unusually meagre. It includes proposals for the improvement of education, for amending the administration of the water supply in the area at present controlled by the London Water Companies, for the improvement of the law of valuation, for the improvement of the law relating to the sale of intoxicating liquors, for the registration of clubs, for amending the patent law, and for sundry reforms in the law of lunacy.

MISCELLANEOUS AND LATE NEWS.

Readers are requested to send items of local news of general pharmaceutical interest. When newspapers are sent, the passages of interest should be marked.

Earlier Closing at Plymouth.—Messrs. E. T. Wood, A. Donning, F. Maitland, and Jas. Cocks have mutually agreed to finally close their respective establishments at 9 p.m. (Saturdays excepted) on and after January 20.

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*Any objection to the registration of an application for the registration of a trade mark must be stated on Trade Mark Form J, obtainable at any money order office, price one shilling. Such objection must be lodged with the Comptroller within a month of the date given above.

TRADE NOTES AND NOVELTIES.

A New Sachet.—Marshalls', Ltd., are offering a most attractive and saleable article in the "shell sachet." It is enclosed in a neat box, possesses great fragrance, and can be obtained in various colours at the low price of 3s. 6d. per dozen.

Morgan's "Hungarian" Paste.—Messrs. W. Sutton and Co., of 76, Chiswell Street, have been appointed sole wholesale agents for the supply of this well-known paste. The sales have largely increased lately, partly due to the fact that this article finds considerable favour as a photographic mountant. It is sold in 6d. and 1s. bottles, also in gallon jars.

Flyodoomo.—General Buller, having advocated the sending out of fly-papers to the army in South Africa, Mr. J. H. Smith, pharmaceutical chemist, Newark, has made arrangements for sending three-dozen packets of "Flyodoomo" post-paid to any address on receipt of P.O. for 3s. The postage alone costs 1s. 6d., so that when material and labour are allowed for, the profit to Mr. Smith is very small.

Aspirin Tabloids.—Messrs. Burroughs, Wellcome and Co. have produced a new form of tabloid, containing 5 grains of aspirin, an acetyl salicylic acid, which is held to possess advantages over salicylic acid and the salicylates, especially in the treatment of conditions associated with rheumatism. From 5 to 15 grains should be taken for a dose, which may be repeated at intervals at the discretion of the physician.

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

Samson Breaks and John William Breaks, trading as S. Breaks and Son, chemical manufacturers, at Wyke. Debts will be received and paid by J. W. Breaks.

Henry Clay Quinby and Melville Gershom Cox Quinby, dentists, 21, Rodney Street, Liverpool. Debts will be received and paid by M. C. C. Quinby.

John Herbert Stacy and Charles Horace Andrews, surgeons and medical practitioners, of 38 and 45, St. Giles Street, Norwich. Each will practise in future on his own account.

John Wallwork Ashworth, Hugh James Dickey, and Harold Snape, physicians and surgeons, Heaton Moor and Heaton Mersey. The practice in future will be carried on by J. W. Ashworth and H. J. Dickey.

Alfred Freeman Peskett and Henry Jasper Cardale, physicians, surgeons, etc., of Leyton. Debts will be received and paid by A. F. Peskett, who will continue to carry on the practice.

Alfred Dowler White, Paul Thomas White, and Edmund White, trading as Alfred White and Sons, manufacturing chemists, at Allen Street, Clerkenwell, and West Drayton, formerly at Castle Street, Saffron Hill, E.C. Debts will be received and paid by P. T. White and E. White, who will continue to carry on the business under the same style as previously.

John Herbert Window Rumsey, Thomas Howell Williams Idris, William Adpar Jones and Edwin Kelsham Bishop, trading as "The Sunlight Sensitised Paper Company," sensitised paper manufacturers and photographic chemists, Avenue Works, 64a, Great College Street, Camden Town.

Joseph Henry Shorthouse and John William Shorthouse, trading as Joseph Shorthouse and Sons, manufacturing chemists and lacquer manufacturers, Shadwell Street and Great Charles Street, Birmingham. Debts will be received and paid by J. W. Shorthouse.

George Boam and John William Thompson, mineral water manufacturers, Chapel Works, Castleton.

John Fitz William Howitt and George Frederick Cross, general medical practitioners, Downham Market, Norfolk. Debts will be received and paid by G. F. Cross.

Charles Oldham and William Jessop, mineral water manufacturers, Wisbech Saint Peter. Debts will be received and paid by Charles Oldham.

William George Hutchinson and John William Grant, Jun., trading as Hutchinson and Co., chemical manufacturers, Burton-on-Trent. Debts will be received and paid by W. G. Hutchinson.

John Loftus Cuppaidge, William Richardson Edmond, physicians and surgeons, Totnes. The practice will be carried on by W. R. Edmund in partnership with Frank Ernest Reynolds, L.R.C.P., M.R.C.S.

Ernest Edward King and Albert George Horden, medical practitioners, Ludlow.

Arthur Bowdler Hill, Robert Yates, Alan Hicks, and Charles Alexander Hill, trading as "Davy, Hill and Son, Yates and Hicks." Debts will be received and paid by C. A. Hill and A. Hicks, who will continue to trade as "Davy Hill and Co."

RECEIVING ORDERS IN BANKRUPTCY.

William John Trythall, chemical manufacturer, Carnon Chemical Works, Perranwell Station, Cusgarne, Gwennap, Cornwall.

George Martyn, physician and surgeon, 16, Orchard Street, Portman Square, London.

William Longwood Fewster, chemist and druggist, Huddersfield Road, Dewsbury.

Edward Molineux Knapp, medical practitioner, formerly of Fairview, Ross, Herefordshire, now of 6, Sydenham Road, Croydon, Surrey.

Thomas Philip Garrett, trading as Garrett Bros., chemists and druggists, 33, Commercial Street, Newport.

Malcolm Edward Thomson, surgeon, 38, Sheep Street, Northampton.

PUBLICATIONS RECEIVED.

Preventive Hygiene. The International Conference at Brussels, September, 1899. By an English Member of the Conference. Second Edition. 1901. Pp. 25. Price 3d. London: Pewtress and Co., 28, Little Queen Street, W.C. From the Publishers.

Marpmann's Illustrirte Fachlexika der gessammten Apparaten.—Instrumenten und Maschinenkunde, der Technik und Methodik fur Wissenschaft, Gewerbe und Unterricht unter Mitwirkung bewährter Fachmänner, herausgegeben von Georg Marpmann, Leipzig. Band I. Chemisch-Analytishche Technik und Apparatenkunde. 1-8 Lieferung. Preis à Lieferung 1.50 Mk. Leipzig: Paul Schimmelwitz. London: H. Grevel and Co., 33, King Street, Covent Garden, W.C. 1901. From the Publishers.

Elementary Bandaging and Surgical Dressing. By the late Walter Pye, F.R.C.S. Revised by the late Thos. Carwardine, M.S., F.R.C.S. Ninth edition. Pp. viii. + 214. Price 2s. Bristol: John Wright and Co. 1901. From the Publishers.

"First Aid" to the Injured and Sick. By F. J. Warwick, B.A., M.B. Cantab, M.R.C.S., L.S.A., and A. C. Tunstall, M.D., F.R.C.S. Ed. Pp. xiii. + 232. Price 2s. 6d. Bristol: John Wright and Co. 1901. From the Publishers.

The War in South Africa, Its Cause and Conduct. By A. Conan Doyle. Pp. vi. + 155. Price 6d. London: Smith, Elder & Co., 15, Waterloo Place, S.W. From the Publishers

Hints for School Gardens. By Wm. G. Freeman, F.L.S. Pamphlet Series. No. 11. Imperial Department of Agriculture for the West Indies. London: Dulau and Co., 37, Soho Square, W. 1901. From the Commissioner of Agriculture.

Seedling and Other Canes in the Leeward Islands, 1900-1901. Pamphlet Series No. 12. Imperial Department of Agriculture for the West Indies. London: Dulau and Co., 37, Soho Square, W. 1901. From the Commissioner of Agriculture.

Seedling and Other Canes at Barbadoes, 1901. Pamphlet Series No. 13. Imperial Department of Agriculture for the West Indies. London: Dulau and Co., 37, Soho Square, W. 1901. From the Commissioner of Agriculture.

The Idler, January, 1902. Pp. 572. Price 6d. London: Dawbarn and Ward, 6, Farringdon Avenue, E.C. From the Publishers.

Poison Romance and Poison Mysteries. By C. J. S. Thompson, F.R.Hist.Soc., M.P.S. New and Revised Edition. Pp. x + 295. Price 2s. 6d. London: The Scientific Press, Limited, 28 and 29, Southampton Street, Strand, W.C. 1902. From the Publishers.

MARKET REPORT.

London, Thursday, January 16, 1902.

Business in Drugs and Chemicals has again been very quiet during the past week, the only change in values of any special importance having been a reduction in makers' prices of Salol and Salicylates, while there has also been a further slump in Sulphonal and also in Lithia Salts. Morphine is also rather weaker. There is also the probability of a slump in price of Hypophosphites, the agreement between the makers to maintain prices not having been renewed. We give below a few particulars.

ACETANILIDE—Is a dull market at 8½d. to 10½d. per lb., according to make and quantity.

ACID BORACIC—Is without change at 22s. for crystals and 24s. per cwt. for powder.

ACID CARBOLIC.—Makers now quite 6½d. to 7d. per lb., according to quantity for the 35° acid in ice crystal form, in large bulk packing, 7½d. to 8d. per lb for the 39—40° ice crystal, and 8¼d. to 9d. per lb for the B.P. quality 39—40° in detached crystals.

ACID CITRIC—Is steady at 1s. 1d. per lb. for crystals in 5 cwt. casks.

ACID OXALIC—Unchanged, at 2½d. to 2⅝d. per lb. nett free delivered London.

ACID TARTARIC.—English on the spot is quoted 11¼d. to 11½d. per lb, and foreign 10½d. per lb.

BENZOLE -Is quiet at 9½d. per gallon for 50 per cent., and 10½d. for 90 per cent.

BICARBONATE OF SODA—Is now quoted £7 5s. per ton landed terms.

BISMUTH SALTS—Are without change at 5s. 5d. per lb. for the subnitrate B.P., and 6s. 1d. per lb. for the carbonate B.P.

BLEACHING POWDER (CHLORIDE OF LIME).—English is quoted £7 5s. per ton.

BORAX.—Crystals are still quoted 13s. per cwt., and powder 14s. per cwt.

BROMIDE.—Prices are unchanged at 1s. 11½d. per lb. for potassi bromide; 2s. 2½d. per lb. for sodii bromide, and 2s. 3d. per lb. for ammon. bromid. Bromine is also unchanged at 2s. 2d. per lb. for case lots.

CAMPHOR.—The English refiners still quote 2s. 2½d. per lb. for Bells and Flowers, price of Tablets being in proportion, according to size.

CHLORATE OF POTASH.—Both Crystals and Powders on spot are now quoted 3¼d. to 3½d. per lb. net.

CINCHONA BARK.—At these periodical auctions, the first of the series, held on 14th inst., extremely small supplies were brought forward, the total only amounting to 954 packages of all descriptions, Calisaya again constituting more than one-half, against 1,552 bales at the preceding sales, and 1,740 packages at the corresponding sale last year. A good demand prevailed, and the larger proportion found buyers at previous London sales' rates, the average unit being a full 1½d., as compared with 1½d. at the January sale a year ago. East Indian: 169 bales offered and sold, according to analysis. Officinalis, stem chips and shavings, fair to good at 4¾d. to 6⅝d., good quality chips at 8d., renewed ditto, 6d. to 6¼d., branch and twigs at 3½d. to 4¼d., good root at 7⅞d., fair quill 6¼d. Ceylon: 79 bales offered and sold. Red stem chips at 4d. to 4¼d., renewed ditto at 4d., hybrid shaving at 6½d. to 6¾d. Java: 101 bales offered and sold. Ledger, stem chips at 9⅜d. to 1s. 0¾d., Ledger branch at 6⅝d. to 8⅝d.; Succirubra, stem chips at 11¼d., ditto root at 6⅜d. South American: 588 bales Bolivian cultivated Calisaya quill offered and 456 bales sold, ordinary to fair at 4d. to 8¼d., broken at 6⅞d. to 7d. 6 bales flat Calisaya bought in. Cartagena: 8 bales damages sold at 3⅜d. to 4⅛d. 3 bags Cuprea bought in. Cochabamba: 20 bales offered and sold, flat yellow at 5⅝d. The next auctions will be held on February 11. The shipment of Cinchona Bark from Java for first half of January are advised as having been 570,000 Amsterdam lbs., which, if not very moderate, can still hardly be considered as being very excessive.

COCAINE.—It is reported that crude is now in considerable supply, so that an advance in price of the refined article is not probable. Makers meanwhile still quote 20s. 9d. to 21s. 3d. per oz., according to quantity for the hydrochlorate, in 25 oz. tins. In view of this high figure, it would appear that a reduction is more probable than an advance.

CODEINE.—Price is firm at 12s. 3d. per oz. for the pure alkaloid in quantity, the salts being, as usual, cheaper in proportion.

CREAM OF TARTAR—Quiet at 71s. for first white crystals on the spot, and at 73s. per cwt. for powder; 98 per cent. foreign powder being quoted 75s. 6d. to 76s. per cwt.

ESERINE (PHYSOSTIGMINE).—Makers maintain their prices of 5s. per gramme for the Sulphate and Salicylate Salts, and 6s. per gramme for the pure Alkaloid.

GLYCERIN.—In consequence of advance in price of Crude, which has gradually risen from £25 to £31 per ton, an advance in price of pure glycerin is thought to be not improbable; the combined makers still, however, quote 63s. 6d. to 65s. per cwt., according to quantity, for the best white double distilled odourless chemically pure 1,260 SG quality.

HYPOPHOSPHITES.—The agreement between the makers not having been renewed, price is lower, without, however, so far having been definitely fixed. Some German makers appear to desire it to be thought that their prices are "twenty-five per shent below those quoted elsewhere."

IODIDES.—The convention makers still quote Potassii. Iodid. 8s. 9d. per lb., Sodii Iodid. 9s. 10d. per lb., Ammon. Iodide 12s. 6d. per lb., Iodoform Cryst. Powder and Precipitated 11s. 8d. per lb., Iodine resublimed 10s. per lb., and Commercial Iodine 6d. per oz.

LITHIA.—The German makers further reduced price, and now quote 5s. 11d. per lb. for the Carbonate in 2 cwt. lots. It is thought that a further reduction in price is not improbable.

MENTHOL.—Kobayashi brand is worth 14s. 6d. to 15s. per lb. for spot delivery.

MERCURIALS—Are unchanged at 3s. 0½d. per lb. for calomel; 2s. 8½d. per lb. for corrosive sublimate, and 3s. 4½d. per lb. for red precipitate.

MORPHINE—Is somewhat weak at 4s. 5d. to 4s. 7d. per oz. for the Hydrochlorate Powder, and 2d. per oz. more for the Crystalline Salt.

NITRATE OF SODA—Is dearer, refined on spot being quoted £9 17s. 6d. per ton, and ordinary commercial quality £9 15s.

OPIUM.—The Smyrna market is quiet, but fairly steady at unchanged prices, while here prices are nominally unchanged at 8s. 6d. to 9s. 6d. per lb. for manufacturing and druggists' qualities. A fair business has been passing in Persian at 9s. 9d. to 10s. per lb. for good to fine quality

PHENACETIN.—The makers still quote 4s. 3d. to 4s. 9d. per lb., according to quantity, for both crystals and powder.

PILOCARPINE.—Makers now quote the Muriate and Nitrate Salts 3s. per gramme, or 76s. per oz.

PRUSSIATE OF POTASH.—Yellow is fairly firm at 5¼d. per lb. for Beckton, and at 5⅜d. to 5½d. per lb. for other English makes.

QUICKSILVER—Is unchanged at £8 15s. per bottle from the importer.

QUININE.—The makers still quote 1s. 2d. per oz. for the Sulphate for 1,000 oz. lots in 1,000 oz. tins, while in the speculative market there is practically nothing doing, 1s. 1¼d. per oz. being quoted for B&S and/or Brunswick Sulphate on spot, with but few sellers thereat.

SALICYLATES.—Makers have reduced prices 2d. per lb. all round.

SHELLAC.—The Calcutta price of TN Orange is cabled to-day unchanged at 70 rupees. The market here remains very quiet. On the spot there is a moderate inquiry with limited sales at steady prices. Futures are inactive, but firm, closing with buyers of March delivery at 122s., and May at 124s. Prices are: January TN, 122s. sellers, 119s. buyers; February, 123s. sellers, 119s. buyers; March, 124s. sellers, 120s. 6d. buyers; April, 125s. sellers, 121s. buyers; May, 126s. sellers, 122s. 6d. buyers.

SULPHATE OF AMMONIA—Is very firm. Grey, 24 per cent., London prompt, £11 6s. 3d. to £11 7s. 6d. per ton. Hull prompt £11 2s. 6d. to £11 5s. Leith prompt £11 5s. to £11 6s. 3d. Beckton, January-June, £11 10s. Beckton, terms prompt, £11 5s.

SULPHONAL.—There would appear to be almost no end to the slump in price of this article, Bayer's make being now quoted 5s. per lb. for both crystals and powder.

TURPENTINE—Is firm at 28s. 4½d. to 28s. 6d. for American on spot; February-April, 28s. 9d.; May-August, 29s.; September-December, 29s. 3d. to 29s. 6d.

MARTELL'S

THREE STAR

BRANDY

THE LANCET, 22nd July, 1899, says:—
"Shows excellent features on analysis, while the evidence of taste is distinctly in favour of the description that it is an old matured grape spirit. This brandy may be described as particularly suitable for medicinal purposes."

DIARY OF THE WEEK.

Tuesday, January 21.

GRESHAM COLLEGE, Basinghall Street, E.C., at 6 p.m.—First of a series of Lectures on "Immunity from Disease," by Professor E. Symes Thompson; the succeeding lectures will be delivered on January 22, 23 and 24.

ROYAL INSTITUTION, Albemarle Street, Piccadilly, W., at 3 p.m.—"The Cell; Its Means of Offence and Defence. Immunity." By Dr. Allan Macfadyen. (Lecture II.)

Wednesday, January 22.

CHEMISTS' MANAGERS' AND ASSISTANTS' SOCIETY OF GREAT BRITAIN, Horse Shoe Hotel, Tottenham Court Road, W.—"What should be Chemists' Managers' and Assistants' Salaries," by C. E. Pickering.

NEWCASTLE AND DISTRICT CHEMISTS' ASSOCIATION, Jubilee Board Schools, Albion Road, North Shields, at 8.15 p.m.—Discussion on the "Apprenticeship Question," introduced by Barry Noble.

WESTERN CHEMISTS' ASSOCIATION (OF LONDON), Westbourne Restaurant, 1, Craven Road, Paddington, W., at 9 p.m.—Smoking Concert.

Thursday, January 23.

CHEMISTS' ASSISTANTS' ASSOCIATION, 73, Newman Street, Oxford Street, W., at 8.30 p.m.—Short Paper Evening.

Friday, January 24.

ROYAL INSTITUTION, Albemarle Street, Piccadilly, W., at 9 p.m.—"The Discovery of the Future," by H. G. Wells.

Saturday, January 25.

PHARMACEUTICAL FOOTBALL AND CRICKET CLUB *v.* CENTRAL TECHNICAL COLLEGE, Wormholt Farm, Shepherd's Bush.

METROPOLITAN COLLEGE OF PHARMACY FOOTBALL CLUB *v.* FLODDEN.—Away.

Notices to Correspondents.

ALL COMMUNICATIONS FOR THE 'PHARMACEUTICAL JOURNAL' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street, Lincoln's Inn, London.

CONTRIBUTIONS sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

CORRESPONDENTS should write in ink, on one side of the paper only, and must authenticate the matter sent with their names and addresses, though not necessarily for publication. No notice can be taken of anonymous communications.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Aplin, Atkins, Birkbeck, Breckon, Browne, Butcher, Cocks, Dowdy, Evans, Ferrall, Harrison, Idris, Kemp, Leslie, Lownsbrough, Merson, Moore, Munday, Pinchbeck, Potter, Ripley, Shelley, Smith, Wilkinson.

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of selling Proprietaries at cost price should buy Rouse's Concentrations, which give the maximum of profit and the minimum of trouble on the smallest initial outlay.

ROUSE'S CONCENTRATIONS.

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BAY RUM ESS. for Bay Rum, B.R. and Cantharides, B.R. and Quinine
TOILET VINEGAR ESS. for excellent Toilet Vinegar.
ESS. DENTIFRICE for Eau Dentifrice and Carbolic Mouth Wash.
EUCALYPTUS COLOGNE ESS. for Eucalyptus Eau de Cologne.
FLORIDA WATER ESS. for Florida Water.
ESS. LAVAND. for Lavender Water, Lav. Smelling Salts, Lav. Liquid Soap, Lavender Brilliantine.

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THE LANCET of August 11th, 1899, says:—
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LONDON: SATURDAY, JANUARY 18, 1902.

ATOMIC WEIGHTS.

The attention of chemists has recently been especially directed to the subject of atomic weights, and the question whether they should be expressed in relation to hydrogen = 1 or to oxygen = 16 has been discussed with the result of very decided differences of opinion. The Committee appointed by the German Chemical Society to consider the matter, consisting of H. Landolt, W. Ostwald, and K. Seubert, presented a report in 1898 recommending that in future oxygen = 16 should be taken as the basis, and a table of atomic weights expressed on that basis was prepared. The desirability of obtaining an international understanding as to the method to be adopted was also pointed out, and with that object a requisition was sent to the Chemical Societies of other countries to take part in the work by responding to the questions put by the Committee whether oxygen = 16 should be adopted as the basis of calculation. Out of forty-nine replies, forty were for oxygen = 16, seven for hydrogen = 1, while two (viz., Cannizzaro and Fresenius) were for retaining whole numbers in both cases, taking oxygen = 16 and hydrogen = 1.

With a view to obtaining further expression of opinion on the subject, teachers of chemistry and practical analysts were then requested to communicate with the Committee. The replies, which have not been very numerous, are now published in a report which appeared in the 'Berichte' of December 28. Professor Volhard has also issued a circular to chemists engaged in teaching, and as analysts, in which he put the question whether hydrogen should be retained as unity in the expression of atomic weights of other chemical elements. To that circular 110 replies have been received, and they show a considerable preponderance of individual opinion in favour of retaining hydrogen = 1 as the basis of a table of atomic weights, that conclusion being arrived at chiefly from the educational point of view, as the plan best suited for teaching purposes. But obviously the question at issue is not one that can be decided by a majority in favour of one or other method.

ANNOTATIONS.

The Calendar of the Pharmaceutical Society makes a somewhat belated appearance for an official year-book, but so long as the lists of members of the Society, corrected up to December 31, constitute a feature of its pages no very great improvement in the matter of publication is feasible. Now it has emerged from the press, however, the disadvantages of late issue may be forgiven and forgotten in the satisfaction of noting that there is in this year's edition distinct evidence of emancipation from restrictive traditions—in fact, the Calendar appears to have started upon a period of progress, and a very gratifying attempt to initiate a business-like arrangement of the official information has been made by whoever may have been responsible for the editing of the book. The Historical Sketch of the Society, for instance, has been purged of its jerkiness, brightened up in regard to construction, and transformed from a patchwork of *non sequiturs* into a comprehensive and connected whole. And this, too, without sacrificing the essential character of the sketch or destroying the original details of value it undoubtedly possessed. Innovation for sake of novelty is apparently not to be the trade mark of the new *régime*, and if the policy of preserving what is good, and casting out the obsolete and undesirable, is persevered with by the Calendar Committee, useful results may be expected to follow in the coming years.

Among the New Features, it may be noted that the Almanac has been enlarged to somewhat more dignified proportions; each month occupying one page and containing references to events of pharmaceutical or general interest—in fact, it is designed to be worth consulting, and will, no doubt, develop in utility as time goes on. Then an entire rearrangement has been effected in the information given about the examinations, the School of Pharmacy, prizes, and scholarships. After the Regulations of the Board is an explanatory note that will be valuable to parents and guardians who have possible students under their care, and, immediately following this, the questions set at the Major Examinations during 1901 are printed instead of being placed, as hitherto, in an unmeaning isolation, divorced from all reference to examinations. Similarly, the list of school prizemen follows the particulars of the School, Bell scholars, those of the scholarship, and so on through the whole of what may be called the official particulars of the work of the Society. A good many members of the Society will welcome also the insertion, under the head of Local Organisations, of a list of Pharmaceutical Associations in Great Britain, together with the name and address of their secretaries, whilst a graceful reference to the work of the Federation of Local Associations, ought to convince chemists and druggists in the provinces that the Council has no desire or intention to snub any honest endeavour to inculcate the principle of collective effort.

A Further Novelty, which is very welcome, is a list of the leading judicial decisions under the Pharmacy Act from Berry *v.* Henderson to the "White" case in the Court of Appeal. We specially commend this list to the notice of registered persons; it will be a liberal education in pharmacy law, and should enable them to follow with wider knowledge the many questions in pharmaceutical politics continually arising. We congratulate the Council on having sanctioned an important departure in regard to its official hand-book, and we hope the appeal for suggestions with which the book is prefaced will meet with cordial and well-considered response, for it marks a sensible desire to profit by honest criticism and to abandon the cult of exclusiveness.

The Advocates of the Metric System are evidently determined that the conversion of Great Britain to a state of grace in regard to weighing, computing, and measuring, shall not go by default, or tarry for lack of judicious stimulation. On Monday next at a general meeting of Convocation of the London University two graduates—Messrs. W. Pringle and H. Hanford—will attempt to obtain from the assembled House an expression of opinion in favour of statutory compulsion in the use of the Metric System. The resolution purports to speak in the interests of commerce, science, and education, and urges the prompt promotion of legislation to make compulsory, after a proper interval, the use of Metric weights and measures for all purposes. Theoretically the proposers have a good case, and objectors none at all, but practical difficulties are neither few nor trivial. That "proper interval," for instance, will not be easy of definition. Mr. Michael Carteighe, in 1895, spoke of ten years as the supposed interval before the use of the system could reasonably be made imperative, but the Select Committee, the same year, recommended immediate legalisation and compulsion after two years. As every one knows, "immediate legalisation" was effected by the Weights and Measures Act of 1897, but 1902 has arrived without the realisation of the second part of the programme, and one may be excused for doubting if it can be effected within the next three years, even if the influential voice of Convocation is added to the "how long" of commerce, science, and education. It may be pointed out in connection with the difficulties inseparably associated with a forced change from one system to another, that the United States effected, some seven years ago, without undue disturbance, the compulsory use of the Metric system for pharmaceutical purposes. Great Britain is quite ripe for a similar process, or it should be after so many years of decimal education.

The Decimal Association, it may be noted, has compiled a list of 162 Members of Parliament who have promised to support the introduction of the metric weights and measures into Great Britain. The Secretary to the Association points out that our chief competitors in foreign trade are Germany and the United States. The former country has already adopted the metric weights and measures (thereby scoring a great advantage over us), and there is a probability of the United States doing so very soon—in fact, two Bills were introduced into Congress last month with this object. In the interests of our foreign trade it is held to be most desirable that we should at once carry this reform into effect, as is proved by the constantly reiterated statements of British Consuls that we lose much trade because our weights and measures are not understood in countries where the metric system is in force. In Australia, Canada, and Cape Colony, the change would be welcomed, and, seeing how easily so serious an impediment to commerce can be removed, it is hoped that the Government will give more attention to the subject in the coming Session of Parliament than it has so far done.

The Canadian Manufacturers' Association, at its latest annual convention, discussed what is regarded in Canada as an important matter, the point being the alleged misuse of the term "American" by people in Great Britain and other countries. Canadians claim an equal right with the people of the United States to be termed "American," but unfortunately the application of the term has become by usage confined to the latter country. That is held to be a serious hindrance to Canadian trade, because Canadian products, not being so well known as those of the United States, are merged with United States products under the term "American," and as a result United States producers receive the credit for Canadian goods, in many cases superior to their own. This is felt to be an injustice, and the Canadian Manufacturers' Association desires (1) to increase the publicity of the term Canadian and (2) to educate the foreign public to speak of "the people and products of the United States," and not the "American people and products." But it may not be out of place to suggest that some confusion of ideas is manifested in the Canadian manufacturers' complaint. If they are so anxious to be known as Americans, why should they be troubled when their products are recognised as American? And why desire to increase the publicity of the term "Canadian" if Canadians prefer to be regarded as Americans?

The Federation of Local Pharmaceutical Associations is anxious to interest pharmacists in Mr. James Paterson's proposals to establish and support provincial schools of pharmacy. The paper was read at the annual meeting of the Federation, held in Dublin last year, and it was printed in full in the *Pharmaceutical Journal* of November 23 last. Reprints of the paper have also been prepared for the convenience of pharmacists who may be disposed to take part in discussions on the subject, and copies can be obtained gratis by the secretary of any pharmaceutical association, on application to the Hon. Secretary of the Federation—Mr. Geo. F. Merson, 24, Newgate Street, Newcastle-on-Tyne.

Poisoning Cases invariably appear to excite writers for the daily press, and frequently to such an extent that accuracy suffers. Thus, the *Globe* begins a short article on "Poisonous Preparations" with the incorrect statement that, although the law regulating the sale of deadly poisons has been frequently amended (*sic*) to give it more operative effect, it might almost as well have been left unaltered for all the good that has resulted. Continuing, the writer plunges into still deeper water by asking what can be the use of scheduling strychnine "so long as it is allowed to be freely sold, in combination with sugar of milk, under the name of 'vermin killer.'" It is remarkable that such perversions should gain currency in reputable newspapers; it is also particularly unfortunate, in view of the fact that arguments based on such false premises are necessarily fallacious, and registered chemists frequently suffer an injustice in consequence. Nevertheless, the *Globe* is probably not far wrong in asserting that the Legislature stands convicted of maladroitness in its endeavours to hedge round the sale of poisons with restrictive precautions, and chemists will not disagree with the proposal that there should be "such a broadening out as would include all preparations capable of being turned to evil account by would-be murderers and suicides." To make a mere pretence of doing that by State regulations is asserted to be even worse than doing nothing, as it creates a public sense of security when there is no real safeguard whatever, while labelling, although very useful to prevent mistakes, is thought to serve only as a guide to those who intend to take away human life. There is much to support that view of the matter, and the *Globe* will do a public service if it can convince legislators that its arguments are as well founded as they undoubtedly are.

The Proprietary Articles Question seems to be troubling grocers much more than chemists at the present time, and the *Grocer* devotes a lengthy article to a communication from Messrs. Cadbury Brothers, Ltd., in which it is stated that, when the time comes that the grocery fraternity unites in fixing price limits that will leave a substantial margin of profit, it will be to the mutual advantage of both the trade and the firm, and the latter will gladly do its share to support such action. It is suggested by Messrs. Cadbury that perhaps the time is not ripe, but they welcome the change in opinion that is setting in the direction of "a living profit on all articles sold," rather than the plan of "cutting down prices to swell an unproductive turnover." Commenting on this communication, the editor of the *Grocer* suggests that since the manufacturer welcomes the prospect of an assured margin of profit for the retailer, while the retailer demands that such assurance shall be given him, the time should surely be "ripe" for joining hands and effecting the common desire. But he adds that he is told there has been this willingness amongst many on both sides for some time past, had it only been brought out by energetic steps to that end. "The manufacturers have been waiting for one another, and also, no doubt, to see whether the retailers had made up their mind. Whilst some have moved—to their credit and, it is hoped, profit—others have doubtless wished to see plain proof that their retail friends were in earnest about the matter, and were strong enough by union to do their part of what was necessary to stop the ruinous cutting of these proprietary goods, and to stop it all round, so that all would get fair play." The "dismal pre-eminence" of grocers in the list of failures for 1901 is attributed to the absence of a living profit on the sale of proprietary goods, and it is insisted that if the organised retailers and the manufacturers joined forces there is little doubt that the essential principle of an irreducible minimum price, and irreducible "living profit," could be upheld all round. According to the *Grocer*, the Proprietary Articles Committee of the Grocers' Federation is a pretty good object-lesson of how things fail to move, but get left in the background, put on the back shelf, as it were, when there is half-heartedness on the part of those who have the handling of them. The perception that those who are not for us are against us was a truth uttered many centuries ago; and grocers are said to find it true just now in regard to various burning questions of the day, including that of the profits on proprietary articles.

The Title "Chemist" has again been misapplied in newspaper reports of an inquest, the proceedings at the coroner's court being also of interest on account of the peculiar nature of some of the evidence presented. The Kensington Coroner, Mr. C. Luxmoore Drew, was holding an inquiry concerning the death of a young child which died somewhat suddenly after some cough mixture had been administered to it. The child's mother said she bought the cough mixture of a chemist, but it proved to have been purchased at a Notting Hill drug store, kept by a person who is not registered as a chemist and druggist. The proprietor of that establishment described himself as a chemist's assistant, and stated that, though he kept a shop, he did not sell scheduled poisons. He added, however, that he had supplied the deceased child's mother with a mixture containing paregoric, which had been prepared by his father—now dead—who was a registered chemist. Continuing, the drug store proprietor said he was now selling as paregoric a mixture which did not contain opium, and it is not surprising to find, therefore, that the Coroner thought many irregularities had been committed by the witness. Mr. Luxmoore Drew added that he should consider the desirability of taking further steps in the matter, and there appears to be good reason for so doing.

An Alleged Cancer Cure is reported as having been the subject of a recent communication to the Paris Academy of Medicine by Dr. Lucien le Roy. The "cure" is stated to depend upon the administration of arsenic and quinine, and the originator of this treatment is said to have expressed the belief that he has thus cured a case of cancer of the lungs in a few days. According to the Paris correspondent of the *Daily Mail*, fifty centigrammes of quinine hydrochloro-sulphate was administered to the patient daily at meal times, for ten days, while five centigrammes of sodium cacodylate was injected daily. Further, Dr. le Roy is said to be preparing another communication, in which he intends to give particulars of other cases he has cured, and of others which are undergoing treatment. He is also said to have expressed the opinion that the parasite of cancer is very similar to that of intermittent fever, "the sovereign remedy for which is quinine and arsenic," and that the treatment which he recommends is "absolutely inoffensive."

The Whisky Maturing Process referred to last week depends upon the addition to the "pot still" of sodium phenyl hydrazine sulphonate, and has been the subject of much discussion in the lay press, while many erroneous statements on the subject have found currency. Writing to the *Westminster Gazette*, Professor Hewitt, the inventor of the process, corrects certain errors in a note published in that paper, and asserts that he has no intention of depriving whisky of the higher alcohols which constitute its most valuable flavouring constituents, what he claims being the removal of the aldehydes to which the raw smell of new whisky is due. Moreover, he adds, one of those aldehydes, furfural, has an evil physiological reputation.

The Beer Poisoning Scare has been revived at Halifax, where three cases of poisoning by arsenic supposed to have been contained in beer are alleged to have arisen. In one case, the deceased was a tramp, who was spoken of as a confirmed drunkard. He died in the hospital three days after his admission, and the medical practitioner who gave evidence attributed death to chronic arsenic poisoning. He stated that everything in the post-mortem examination he had made supported that view, and that two other patients had been admitted to the institution suffering from the same effects. The patients, after taking beer, were usually sick, and those symptoms would not arise from pure alcoholic poisoning, which the witness, whilst at the Manchester Infirmary, had special facilities for watching. Ultimately the Coroner adjourned the inquiry for an analysis of the contents of the stomach and of the beer at the house which the deceased usually frequented.

The Chemists' Ball, held on Wednesday, January 15, was as great a success is every way as any of its thirty-five predecessors, and the Hon. Secretary, Mr. Ernest W. Hill, deserves well of his Committee for carrying out all the arrangements in so thoroughly satisfactory a manner. The place of assembly was the Whitehall Rooms, Hôtel Métropole, which again proved their peculiar fitness for large social gatherings, in spite of the fact that the space available for dancing is somewhat limited as compared with the Portman Rooms, where the ball was formerly held on so many occasions. On the present occasion there was an attendance of about 230, including the President of the Pharmaceutical Society, who was becomingly adorned with the presidential chain and badge, Messrs. Butt, Carteighe, Cooper, Harrington, and Warren; Mrs. and Miss Newsholme, Mrs. Carteighe, Mrs. and the Misses Harrington, Mr. and Mrs. Gulliver, Mr. and Mrs W. H. Francis, Mr. H. Wright, Mr. and Mrs. J. C. Umney, Mr. Edmund White, Mr. and Mrs. C. T. Tyrer, and Mr. Richard Bremridge were also among those present. Dancing commenced about 9.0 p.m. to the rhythmic strains of Dan Godfrey's orchestral band, and shortly before midnight supper was served in the handsome dining hall of the Métropole, the excellent menu and table arrangements giving the same satisfaction as last year. Mr. Newsholme, in proposing the one toast of the evening, "Success to the Chemists' Ball," referred to the continued success of the Ball, now in its thirty-sixth year, and eulogised the work of the Committee, as well as that of the Honorary Secretary, Mr. Ernest W. Hill.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

Milk of Sulphur.

At Marlborough Street Police Court on Thursday, January 9, John R. Shardlow, oilman, 15, Broad Street, Golden Square, W., was summoned for selling as milk of sulphur an article which was subsequently certified to be "sublimed sulphur." Mr. Strutt, who appeared on behalf of the Westminster City Council, in reply to the magistrate (Mr. Kennedy), stated that if the article in question was taken in mistake for milk of sulphur it might cause considerable irritation, as it contained gritty particles, and was not prepared specially to be taken inwardly.—The Defendant said that if he had known there was any difference between milk of sulphur and the article sold he would not have sold it, as it would not pay him to run the risk.—The Magistrate pointed out that he might poison somebody if he did not know the difference between the articles he sold. "If," said the magistrate, "someone asked you for flour, would you give them arsenic?"—Defendant: "I don't sell it."—The Magistrate: "This is a very dangerous state of things, oilmen selling drugs. You will have to pay a fine of £2, with 14s. 6d. costs."

At Bradford West Riding Court on Thursday, January 9, John William Hird, grocer, Shipley, was summoned for selling milk of sulphur containing 62 per cent. of "hydrated calcium sulphate."—Defendant stated that he sold the milk of sulphur in sealed boxes just as it was supplied to him. He contended that he was not responsible for the adulteration.—The Bench fined defendant 20s. and costs, the Chairman remarking that he ought to be indemnified by the wholesale firm who supplied the milk of sulphur.

Camphorated Oil.

At the Kensington Petty Sessions, on January 14, before a full Bench, Thomas Strode, chemist and druggist, 88, Askew Road, Shepherd's Bush, W., was summoned at the instance of the Hammersmith Borough Council for unlawfully selling to the prejudice of the purchaser six-pennyworth of camphorated oil, which, according to the Public Analyst's certificate, was not of the nature, etc., demanded, by reason of it being deficient in camphor to the extent of 23·3 per cent., contrary to the Statutes. The sample was stated to consist of 16·4 parts of camphor and 83·6 parts of olive oil.

Henry Oatley, Inspector of the Borough Council, under the Sale of Food and Drugs Act, stated that on November 28 last he went to the defendant's shop and asked for six-pennyworth of camphorated oil. He was served by the defendant himself, the article being in a bottle marked "Camphorated Oil," and witness paid 6d. He then complied with the provisions of the Act by dividing the article in the usual way, and subsequently received the Public Analyst's certificate (produced). The certificate ran:—

> This sample is deficient in camphor to the extent of not less than 23·3 per cent. This opinion is based upon the fact that this preparation, when prepared according to the British Pharmacopœia, contains not less than 21·4 per cent. of camphor. The sample is, therefore, adulterated. —(Signed) William Chattaway.

Mr. Bull, on behalf of the defendant, said he had advised his client to plead guilty, but thought it only due to Mr. Strode to state briefly the circumstances under which the article was made. The defendant had a thoroughly competent boy to help him in his business, and it appeared that in making the camphorated oil in question this lad had not properly mixed the ingredients. Mr. Strode handed out the ingredients, and the boy put them into the vessels, but he did not thoroughly mix them, and the camphor settled at the bottom of the vessel.

The explanation given failed to satisfy the Bench, and the Chairman said it was necessary that an example should be made in this case, with a view to protecting the public. The defendant would, therefore, be fined £5. Subsequently, however, the penalty was reduced to 40s., though the Chairman said it was very necessary that great care should be taken in the preparation and serving of such articles. In a case of poisoning by mistake the offence was more than a blunder, it was criminal.

On Wednesday, at the Burnley Borough Police Court, Jesse Tomlinson, described as a chemist—[The name of Jesse Tomlinson does not appear on the Register of Chemists and Druggists, 1902.—Ed. *P.J.*]—was summoned for selling camphorated oil which was found by the Borough Analyst to be deficient in camphor to the extent of at least 36 per cent.—Defendant said that a mistake had been made, and that there was no intention to wilfully deceive anyone.—Fined 10s. and costs.

Spirit of Nitrous Ether.

On Monday, January 13, at Keighley Borough Police Court, Sophia Ogden, grocer, of Braithwaite, was summoned for selling sweet spirit of nitre, which, according to the certificate of the County Analyst, contained only 0·98 per cent. of ethyl nitrite, instead of 1·75 per cent., the minimum proportion required by the British Pharmacopœia.

For the defence it was stated that it was impossible to prevent evaporation taking place, owing to the fact that in small village shops, where the drug was sold in small quantities, the stopper had to be removed from the bottle many times before the stock became exhausted. In the present case there had been no adulteration, and reasonable care had been used.

The Bench decided that a technical offence only had been committed, and imposed a fine of 1s. and costs.

At Burnley, on January 8, Robert Tickle, a medical herbalist, carrying on business at Old Hall Street, Burnley, was summoned for selling spirit of nitrous ether which was deficient in ethyl nitrite. For the defence it was urged that the deficiency was due to evaporation. A fine of 10s., including costs, was imposed.

Gregory's Powder.

At Pontefract, on January 11th, William Henry Beetham, drug dealer, Ackworth, was summoned for selling Gregory's powder not of the nature, substance, and quality demanded, and he was fined 30s. 6d., including costs.

The Division of Samples.

Before Mr. Justice Darling and Mr. Justice Phillimore, sitting as a Divisional Court of King's Bench on Tuesday, Mr. Griffith Jones moved for a rule *nisi*, calling upon Alderman Vaughan Morgan, sitting as a Court of Summary Jurisdiction at the Guildhall, to show cause why he should not state a case. He heard a summons against a milk seller named Richards, and convicted him for selling milk diluted with water. The grounds of the appeal were that there was a very material omission in the copy of the analyst's report attached to the summons, which stated that he had received from the Inspector "a sample of ——." In the original the word milk was inserted, but in the copy served on the defendant the blank was not filled in. Counsel also took the point that though the Act provided that the samples were to be divided and sealed "there and then," the Inspector took them from the shop to an adjoining room and there sealed them.

Their Lordships refused the rule.

Stockbroker and Chemist.

Mr. Justice Jelf, sitting without a jury in the King's Bench Division, on Tuesday, January 14, heard a case in which William Richard Eaton, member of the London Stock Exchange, sued Geo. Croker, a chemist, trading as Geo. Bennett, at 107, Brixton Road, to recover £120, balance of account due for commission earned as broker on the purchase and sale of stocks and shares, and for differences on Stock Exchange transactions. The plaintiff's case was that the defendant asked him to open a very speculative account in American shares, and plaintiff only agreed to do so on condition that he was kept supplied with cover, and stipulated that if at any time he found he had not sufficient cover in hand to meet any loss, he should be at liberty to close account. Nothing was said as to giving notice of closing the account, but it was pointed out that with speculative stock of this description, in time of panic the defendant might lose a couple of thousand pounds before he could even communicate with the plaintiff. There were dealings up to July, 1901, when plaintiff closed account, the cover having run off, and claimed the amount due. The defence was that the transactions were entered into on the terms that the plaintiff should hold the stock until instructed to sell, the defendant supplying reasonable security, and that the losses were incurred by the plaintiff's wrongfully, and without authority, and without giving the defendant an opportunity of supplying cover, closing the account. He contended that but for this there would have been a profit, and counter-claimed for £380.

His Lordship was satisfied that a special bargain was made as stated by the plaintiff, and gave judgment for the plaintiff on the claim and counter-claim with costs.

The Property in a Recipe.

The case of Poisson *v.* Robertson, which was decided in the Court of Appeal on January 14, dealt with the question of the property in a recipe. The occasion was an appeal against the decision of Mr. Justice Joyce, who had decided against the plaintiff in a case where a claim was made to be entitled to a joint interest in a secret remedy for drunkenness called "Tacqaru." The plaintiff had asked for an order that he might be at liberty to inspect and take copies of the original recipe for the manufacture of the remedy, which was in the possession of the defendant, and that defendant might be ordered to produce the recipe.

It appeared that in 1895 the recipe became the joint property of two persons, one of whom, named Edwards, agreed later that the other, named Robertson, should have the sole right of dealing with the remedy for their joint benefit, and that Edwards should not disclose the secret. Later still, Edwards sold his half to a person named Woods, the assignment containing a clause precluding Woods from the right of knowing the secret. Woods subsequently assigned one-half of his interest to the plaintiff, Poisson, and Robertson also assigned for value a quarter of his half-share to Poisson. In 1900, however, Robertson purported to assign the absolute sole right and interest in the remedy to the defendant Turvey, whereupon Poisson and Woods brought an action claiming a declaration that the alleged sale to Turvey was a fraud on their rights and void, and that the plaintiff Poisson was entitled to have the secret of the remedy communicated to him by Robertson. That action was tried by Mr. Justice Kekewich, who declared that the sale by Robertson to Turvey operated only to pass three-eighths of the interest in the remedy, and that the plaintiff Poisson was entitled to three-eighths and the plaintiff Woods to two-eighths. It was stated that the original recipe was written on a piece of paper which was destroyed by Turvey shortly after the trial, but that he had kept a copy of it, which was in his possession, and he refused to produce it. When the matter came before Mr. Justice Joyce he regretted that he did not see his way to make an order on the defendant, his impression being that the plaintiff could only succeed by showing that he had a right of property, legal or equitable, in the piece of paper, or that he had it by contract, express or implied. He held that the right to an interest in the remedy did not necessarily involve a right to the paper or to a knowledge of the secret, and that the plaintiff ought to have bargained for that before paying his money.

The plaintiff now asked that the Court should order production of the recipe, but the appeal was dismissed. Lord Justice Vaughan Williams remarking that, as it was not desirable at any time that the Court should determine questions which it was not necessary that the Court should deal with for the determination of an action before it, he did not propose in the slightest degree to lay down the law with regard to what might be the rights of a co-owner of property in a case like the present. All he could say was that if the result of the contract was that the plaintiff had become co-owner of a chattel, and that chattel had been converted by the other co-owner, the defendant, there was not any rule of law which would debar the other co-owner from bringing an action for that conversion. If the defendant had dealt with the joint property by selling it, the other co-owner, who was not originally a party to the sale, could not come in by action and compel his co-owner to account for the moneys resulting from the sale of that common property or any part of it. Lord Justice Stirling also thought the order of the learned Judge below was right, and Lord Justice Cozens Hardy concurred.

POISONING CASES AND INQUESTS.

Weed Killer.—At Carshalton on Tuesday, December 31, an inquest was held concerning the death of Frederick Beaumont (47), of Thornton Heath, gardener and groundman, at Whitgift Grammar School, Croydon. The evidence was to the effect that deceased suffered from delusions, and that he had swallowed some "Smith's Weed-Killer," which was kept in a two-gallon jar, for use on garden paths. Verdict: "Suicide whilst of unsound mind."

Laudanum.—An inquest was held at Penge on Wednesday January 1, respecting the death of George Wickens, aged four weeks. The mother of the child stated that deceased developed a bad cold, so she obtained a pennyworth each of laudanum, peppermint, aniseed, and paregoric, which she mixed with treacle and boiling water, and then gave the child half a teaspoonful. On the following day two half-teaspoonfuls of the mixture were administered, but as it did not seem to do any good, a doctor was sent for. He told her she ought not to have given the baby the cough mixture, and that he thought it was suffering from an overdose of laudanum. The four constituents mentioned were obtained from a chemist in an ounce bottle, which was about one-third full, and the father stated that the recipe for the cough mixture was given to his wife by a trained nurse, and they used it for colds for themselves and their children.—Dr. Michael said he found the child in a lethargic state with a very feeble pulse, and blue about the lips. A chemist would supply sixty drops of laudanum in the mixture purchased and, if the child had three half-teaspoonfuls of the mixture, it probably had three-eighths of a drop of laudanum, which, in the weak condition of the child, was sufficient to prove fatal.—Charles Smith, chemist, 47, Anerley Road, said he served the mixture in question. It was a very common household remedy, and he made it up without question. He labelled it "Poison" in accordance with the requirements of the law. Had he known it was intended for a child of four weeks he should have refused to supply it, but he thought it was for cough mixture for an adult.—Verdict: "Died from congestion of lungs and bronchitis, accelerated by opium poisoning."

Laudanum.—Henry Joseph Brown (29), landlord of the "Rising Sun," East Street, Walworth, suffered from insomnia, and on Friday, January 3, he drank a quantity of laudanum. The usual antidotes were administered, but death occurred the same night. An inquest was held on January 8. Verdict: "Death from misadventure."

Laudanum.—Selina Smith (39), of 52, Bachelor Street, Leeds, died on January 4 from the effects of laudanum poisoning. At the subsequent inquest it was stated by the husband that deceased was given to drink and accustomed to take laudanum. The man with whom deceased had cohabited for nearly eleven years stated, however, that she was not of drunken habits, and the boy who obtained two-pennyworth of laudanum from Mr. J. R. Bentley, chemist, stated that he had not been in the habit of procuring laudanum for her. A verdict was returned in accordance with the medical evidence; but the jury could not agree as to whether the poison was taken with a suicidal intent or not.

Morphine.—At Hastings on January 6, an inquest was held concerning the death of Alexander Harry Bisset (49), formerly manager of a coffee plantation in Ceylon. It was stated that deceased had suffered from cancer of the tongue and had on several occasions had morphine injected under the direction of a doctor. On December 24, the doctor, at the request of the deceased, ordered an injection of morphine, one grain, in twelve of solution, that being stronger than the old solution, which was one grain in twenty. A six minim injection was given and death subsequently occurred. A post-mortem examination showed that death was caused by morphine poisoning.—Thomas D. Vint, chemist, stated that when the prescription for the morphine solution was presented he directed the doctor's attention to the increased strength, and the prescription was confirmed.—Verdict: "Death from misadventure."

Oxalic Acid.—Charles David John Bartlett (26), a labourer, of Charlton, who was in the habit of taking Epsom salts, also kept on the same shelf as the salts a packet of oxalic acid for cleaning brass. On Monday, January 6, he was found on his knees unable to say more than that he had taken poison, and at the inquest held on January 10, the jury found that the deceased had taken oxalic acid by mistake.

Strychnine.—At the Westminster Coroner's Court, on January 13, Mr. John Troutbeck held an inquiry concerning the death of Louie Müller, aged 40 years, who had committed suicide at a restaurant in Victoria Street, Westminster, by taking a large quantity of strychnine. Deceased was found dead in bed, with a bottle containing strychnine solution near her. It did not appear where the poison had been purchased, and the Coroner said he thought the police ought to institute inquiries, in order to ascertain if possible where such a large quantity of strychnine had been obtained. The jury returned a verdict of "Suicide during temporary insanity," and expressed approval of the Coroner's suggestion.

Carbolic Acid.—At Dublin, on January 6, the City Coroner held an inquiry concerning the death of Mary Sullivan, aged 14 years, who had been accidentally poisoned by carbolic acid. Deceased had been a patient in Cork Street Hospital, Dublin, and was shown to have died from the effects of carbolic acid, inadvertently administered instead of the medicine ordered for her. A blue glass bottle containing the poison appears to have been placed upon the wrong shelf, and, in the absence of a qualified compounder, was taken down, and some of the contents used by the nurse, in mistake for the white glass bottle containing the mixture ordered for the patient. The jury returned a verdict of "Accidental death," without attributing blame to anyone, and the Coroner said he quite agreed with the verdict.

Syrup of Chloral.—At Lincoln, on January 9, Mr. A. Trotter held an inquiry concerning the death of a local ironmonger named John Elliott, aged 53 years, who had been found dead in his shop with a bottle which had contained syrup of chloral by his side. Deceased had been in the habit of taking sedatives, and the jury returned a verdict of "Death by misadventure," caused by an overdose of a draught taken to induce sleep.

Poisonous Lotion.—Mr. S. McMillan, a well-known farmer of Laighwood, on the morning of Sunday, January 12, rose early and went to a press to help himself to a little spirit, but in the dark he took up a bottle containing a poisonous lotion for external application and drank a quantity of the liquid before perceiving his mistake. Everything was done to counteract the effect of the poison, but without avail, death occurring shortly afterwards.

Phosphorus.—Frederick Cecil Barrett, aged one year and seven months, son of a Rugby railway porter, found some lucifer matches which he sucked. He showed no symptoms of illness for several days, but on Wednesday, January 8, he died from the effects of phosphorus poisoning. At the inquest on January 10, a verdict of "Death from misadventure" was returned.

Cough Mixture.—At the Kensington Coroner's Court, on January 11, Mr. C. Luxmoore Drew held an injury concerning the death of Arthur Frederick Chapman, aged two years and four months. The mother of the child said that on December 31 the child had a slight cough, but she did not think he was seriously ill, and went to a chemist's for two-pennyworth of cough mixture. It seemed to ease the child, but next morning he was seized with convulsions, and died before a doctor could be called in. The bottle in which the mixture was sold was labelled "Cough mixture——Slack's Drug Stores, Walmer Pharmacy, 142, Walmer Road, Notting Hill.—Alfred John Slack, of 142, Walmer Road, who described himself as a chemist's assistant, and not a registered chemist, said he kept a shop, but did not sell scheduled poisons. The mixture he had sold was prepared by his father, a chemist, before his death. The mother asked for a cough mixture for a child, and he served her from the stock, giving verbal instructions as to the dose. The mixture contained syrup of squills, paregoric, ipecacuhana wine, and essence of peppermint. The paregoric contained a slight proportion of opium.—The Coroner pointed out that the witness had contravened the Pharmacy Act, and had attempted to deceive him by having written to say that the paregoric did not contain opium.—Witness said that was a mistake; the paregoric he sold now did not contain opium.—The Coroner also pointed out that the bottle was not labelled "Poison," as was required by law, and witness said many chemists did not do so. He had not a poisons book.—The Coroner said there were many irregularities committed by the witness. It was an important case on public grounds, and he should consider whether he should not take some further steps in the matter.—Dr. A. T. Nash, of Blenheim Crescent, said his post-mortem showed death was due to convulsions from tubercle of the mesentery. Opium was a dangerous thing to give to children, but death was not accelerated by it in this case. A teaspoonful of the mixture would contain two-hundredth of a grain.—The jury returned a verdict in accordance with the medical evidence.

SOCIETY OF CHEMICAL INDUSTRY.

At a meeting of the Manchester Section held at the Victoria Hotel, Manchester, on Friday, January 10, Dr. Grossmann in the chair,

Dr. Gerland (Accrington) gave a *résumé* of his investigations in the

Determination of Small Quantities of Arsenic.

He said that, supposing arsenic was dissolved with some organic or other foreign substance, the safest way to separate the arsenic was by means of sulphuretted hydrogen. If the quantity of arsenic was very small it frequently happened that the sulphide of arsenic remained in solution in a colloidal state. To get over this difficulty it was only necessary to add a small quantity of any metal precipitated by that gas, bismuth by preference. A very small amount of bismuth would bring down the arsenic completely, and that precipitate could be readily filtered and washed. By treatment with ammonium carbonate the arsenic was dissolved out in a pure condition. The solution evaporated left the arsenic as a sulphide, and that, being fluxed with a small quantity of sodium carbonate and nitrate of potassium, gave an arseniate. By treatment with sulphuric acid all the nitric and nitrous acid was expelled, and the arsenic was left as arsenic pentoxide in the presence of sulphuric acid, sulphate of potassium, and sodium, and could be readily ascertained by different methods, especially by that of iodine.

Some conversation on the subject followed, in which Mr. Carter Bell, Dr. Duncan, the Chairman, and Mr. Grimshaw took part.

Vanadium.

Dr. Gerland said he had received a communication from Mr. R. Frenzal, who had a quarry of sandstone impregnated with vanadium in the United States, and was preparing vanadium pentoxide at 1s. 6d. per lb., and was prepared to send samples of ground ore to anyone interested.

CHEMISTS' ASSISTANTS' ASSOCIATION.

The second half of the session of the C.A.A. opened on January 9 with a very successful musical and social evening. The President, Mr. J. Wycliffe Peck, occupied the chair, and there was a good attendance of members. The feature of the evening was a gramophone, exhibited by Mr. H. Hymans. Records of songs by Mr. Ben Davies, Dan Leno, and the Gotham Quartet, violin solos, piccolo and 'cello solos, orchestral pieces and carillons by bell-ringers were successfully reproduced. Messrs. Blin, Latreille, D. C. Jones and H. Hayling contributed excellent songs. Mr. Coupland ably officiated at the piano, and the proceedings closed with a spirited rendering of the National Anthem.

EASTBOURNE CHEMISTS' ASSOCIATION.

The inaugural dinner of this Association took place at Runge's Royal Restaurant, Terminus Road, on Wednesday, January 8, under the chairmanship of the President, Mr. J. Senior (Divisional Secretary of the Pharmaceutical Society). There was a good attendance of members present, comprising most of the principal chemists of the town, and including Messrs. Senior, Price, Browne, Harmer, Marchant, Packer, Earnshaw, Routly, Charters, Temple, and Fletcher. After the usual loyal and patriotic toasts, the following were proposed and responded to:—"The President," "Our Association," "Executive Officers," and "Visitors." There was an excellent musical programme, and in the course of the evening it was mentioned that the Association had started an early closing movement, the time of closing to be five o'clock on Wednesday afternoons during the year, with the exception of the months of July, August, and September.

YOUNG CHEMISTS' ASSOCIATION.

At a general meeting of this Association, held at Lockhart's Café, Grainger Street, Newcastle-on-Tyne, on January 8, the chair was taken by the President, Mr. Barry Noble, who delivered a brief address, in which he emphasised the fact that upon the rising generation of pharmacists rested the responsibility of the

Future Status of the Calling.

He appealed to them to support the Association so as to widen their view of pharmacy. He thought young chemists ought to know the B.P. thoroughly, and in order to encourage this study he offered a prize namely, Remington's 'Pharmacy'—at the end of the session, to be competed for, by examination, under certain conditions.

Mr. Weden-Sims then gave a paper on

Is Our Calling a Trade or Profession?

This vexed question called forth much discussion, in which Messrs. Murdoch, Hollingsworth, Nimmo-Scott, Wilson, Katzner and Usher took part.

Mr. Weden-Sims took the professional aspect, and dealt with his subject ably and well. He said that the chemist of a hundred years ago was regarded as a scientist and professional man, largely due to the ignorance of the public at that time, but that now things were on a different footing. He held that a chemist is very different from a grocer in that the properties of the drugs he sells are known to him, whilst a grocer knows little beyond what profit he is getting on his goods.

After the discussion, when the President called for a vote, one hand was put up for profession and none for trade. This was unsatisfactory, and the decision finally arrived at was that as long as the business of chemists and druggists continued to be combined, so long would it be a mixture, as a chemist is a professional man and a druggist a mere trader in drugs.

A vote of thanks for the paper was given by Mr. Murdoch, and seconded by Mr. J. F. Usher. Mr. Weden-Sims, in replying, proposed a hearty vote of thanks to the President for his sympathy and active help. This was seconded by Mr. Scott.

Messrs. Hollingsworth, Katzner, and Wilson were elected to serve on the committee.

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION.

At a meeting of this Association held at the Church House, Dewsbury, on Monday, January 13, Mr. W. Stead in the chair, reference was made to the question of the formation of

A Federation of Associations

in the West Riding of Yorkshire.

The Secretary (Mr. G. Walker) stated that the Leeds and Sheffield associations had declined to join such a federation, only Huddersfield had expressed their willingness to join. Other associations had not replied to letters which had been sent out. The matter was left over. Accompanying the letter from the

Sheffield Association was the following resolution:—"That in the opinion of the Council of the Sheffield Pharmaceutical and Chemical Society, it is most undesirable at the present time to form a federation of West Riding associations. Moreover, the Council is of opinion that the multiplicity of associations, one within the other, with one object in view, is unnecessary, and tends rather to check and hinder progress than otherwise, and therefore a federation of associations would not help on the good work which is now being done by the Pharmaceutical Society of Great Britain."

Mention was next made of the approaching

PARLIAMENTARY BYE-ELECTION AT DEWSBURY,

and the question of approaching the candidates was discussed. Eventually, it was decided, on the motion of the CHAIRMAN, that the Secretary should write to the Secretary of the Pharmaceutical Society, asking if he thought it was advisable to wait upon the candidates, and if he could furnish them with any points to lay before them with regard to the proposed legislation.

A communication was read from the

FEDERATION OF LOCAL PHARMACEUTICAL ASSOCIATIONS,

calling attention to the Conference held in Dublin last July, and to the question of establishing and supporting provincial schools of pharmacy, which was then discussed. Information was asked for as to the facilities provided in the district for education, and for opinion on the following questions:—A compulsory curriculum; division of the Minor or qualifying examination; and apprenticeship.

The SECRETARY said he thought education was sufficiently provided for in the district by the colleges at Leeds, Bradford, and Huddersfield, and the technical schools in the immediate district. After further discussion, the Secretary was instructed to reply that the Association was in favour of a compulsory curriculum, providing provincial colleges and technical schools were recognised. The question of dividing the qualifying examination was also approved. As to the apprenticeship question, it was agreed, on the suggestion of the Chairman, that the Secretary should write, stating that members of the Association had experienced the same difficulty as existed in almost all parts of the country in obtaining suitable youths. They did not consider this was attributable to the high educational ability required, but were of opinion it was due to the prospect of wretched remuneration when they had finished their apprenticeship, and to the unfair competition which prevailed.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION.

At a fortnightly meeting of this Association, held at the Royal Hotel, on Tuesday, January 14, the PRESIDENT, Mr. Hanson, in the chair, the HON. SECRETARY (Mr. F. A. Wilcock) drew attention to the question of the proposed establishment of

A WEST RIDING FEDERATION OF CHEMISTS' ASSOCIATIONS.

The PRESIDENT said he certainly thought that a West Riding Federation might be a very good thing, but they had not yet any very precise information as to the purposes of such an organisation or the view that the other associations took of the matter.

Mr. WILCOCK said that he was given to understand that all the other West Riding associations had expressed themselves in favour of such a step.

Alderman DUNN expressed doubt whether there were any matters which the West Riding Federation could deal with which could not be just as well dealt with on the initiative of the Pharmaceutical Society from London. The multiplication of associations meant, of course, the increase of expense.

Mr. SILSON, Mr. MARSHALL, and others having expressed approval of delay, the Secretary was eventually instructed to apply for further information of the purposes of the proposed federation.

The meeting then proceeded to consider the circular letter dealing with the question of the facility for

PHARMACEUTICAL EDUCATION IN THE PROVINCES,

and other points referred to in the circular recently sent out by the Federation of Local Pharmaceutical Associations.

After a prolonged discussion, a resolution was carried to the effect that the Association is of opinion that so long as any unqualified person is permitted to keep open shop the enforcement of a curriculum would inflict serious injustice upon registered chemists and druggists.

A resolution was passed approving of the proposal to divide the Minor Examination.

Upon consideration of the question of apprentices it was resolved that the question could not be considered until the legal position of chemists is better defined.

AMERICAN NEWS.

SMALL-POX AND TETANUS.—Owing to the continuance of small-pox in Philadelphia, the city authorities decided to offer free vaccination to all persons desiring it. Some forty doctors began their labours by a house-to-house visitation. Every effort is being made to cope with the epidemic, which undoubtedly is a severe one. The health officials are distributing circulars urging the necessity of vaccination. Unfortunately, great alarm and distrust has been caused by the lamentable occurrence at Camden, N.J., which is also visited by the disease. Several cases of tetanus, supposed to be the result of vaccination, are reported, causing considerable alarm and, as a natural consequence, much opposition to vaccination. The matter has been fully investigated, and it is satisfactory to find that the vaccine supplied by the Board of Health could not possibly have been the cause of the infection, owing to the extreme care with which it is prepared and the rigorous tests to which it is subjected before use. In all probability the infection was due to lack of care or cleanliness on the part of the patient or those in charge of the case.

DIPHTHERIA AND TETANUS.—Yet another terrible disaster of a similar nature is reported from St. Louis. Tetanus has claimed thirteen little victims, this time directly traceable to the diphtheria antitoxin manufactured in the municipal laboratory; the Health Department is, in consequence, charged by the City Coroner with negligence in preparing and distributing the serum. Criminal carelessness appears to have been shown by the responsible person or persons. As a matter of fact, the antitoxin was sent out without the physiological tests having been applied at all—the assistant bacteriologist admitting that some guinea-pigs were ordered, but on arrival were found to be too big for the purpose, and hence the tests were not made, and so the innocents of St. Louis were sacrificed.

SODA FOUNTAINS AND ICED DRINKS.—In many English pharmacies may now be seen the elegant soda fountains, with their iced drinks for summer's heat and their hot drinks for winter, which have of late become so popular. In several stores in America a lunch counter is also introduced as a twentieth-century side-line, ice cream, cheese and ham sandwiches, and other delicacies being on the "bill of fare." Those druggists who have tried the plan pronounce it to be successful, says the *Era*, and those who serve hot soda will before long probably also sell "pies and sandwiches!"

THE SCARCITY OF APPRENTICES.—The *Canadian Pharmaceutical Journal* sounds a very hopeful note on the apprenticeship question, stating that in future those contemplating pharmacy, realising that special training for registration is necessary, will secure such before presenting themselves, and the future pharmacist will be one who has selected it as a calling and not just "drifted into it." Such men will be of greater value as apprentices. Although there will be a slight inconvenience for a time, matters will speedily right themselves, and an improved condition be the ultimate result.

SOUTH AFRICAN NEWS.

(From Our Cape Town Correspondent.)

SCIENCE IN SOUTH AFRICA.—A meeting of the members of the S. A. Association for the Advancement of Science was held in the hall of the Education Department, Cape Town, on December 16, Sir David Gill, the Astronomer Royal, presiding. The medical faculty was represented by Dr. Marloth and Dr. A. Jasper Anderson, M.O. for Sanitary Department. The Chairman explained that the meeting had been called for the purpose of considering the proposed draft constitution of the Association. Mr. W. E. Cursons, Secretary, read the interim report, and stated that one of the most encouraging features was the formation of the branches at several of the important business centres in S. Africa. He stated the number of members at present standing at 300, and it was expected as many more to join the Transvaal centre alone. It was decided the head centre should be at Cape Town for the present. It was also decided that voting by proxy and circular should be permitted in the case of the election of members of the Council or of alteration of the rules. It was decided that pending the election of a Council, the acting Chairman and Secretary be empowered to conduct the affairs of the Association. The meeting then closed with the usual vote of thanks to the Chairman and Dr. Muir for use of the hall.

DEATH OF DR. LANDSBERG.—The death is announced of Dr. John Philip Landsberg, M.D., of Rondesboch. The deceased was a son of Mr. Ernest Landsberg, and, therefore, a member of a remarkably long lived family. His father was 96 when he died, and his uncle, Mr. Otto Landsberg, is on the verge of 100. Dr. Landsberg, however, only reached the age of 65 years. He had led a very active professional life, without a break, until a year or so ago, when he took a trip to Europe; and though he abstained from politics he rendered valuable services to charitable institutions, such as the Old Somerset Hospital, the Free Dispensary and Robben Island. He was also a member of the old Colonial Medical Board.

MR. H. A. G. RUSSO, chemist, of the Tramway Dispensary, Cape Town, having disposed of his premises (with advantage to himself) to the Bank of Africa, Ltd., purposes removing the business to the vicinity of Hanover Road at an early date.

DR. CHARLES PORTER has been appointed Medical Officer of Health for Johannesburg.

LICENCES HAVE BEEN ISSUED authorising the undermentioned persons to practise as medical practitioners in Cape Colony:—Alfred Bentley Sighmond Powell, Lic. Roy. Coll. Phys., Lic. Roy. Coll. Surg. Edin., 1898, Lic. Fac. Phys. Surg. Glasg., 1898; Walwyn Thomas, M.B., Bac. Surg. Univ. Camb., 1895; Patrick Jobson Henderson, M.B., Mast. Surg. Univ. Aberd., 1896; Frank Mayo Morris, Mem. R. Coll. Surg. Eng., 1898, Lic. R. Coll. Phys. London, 1898, M.B., Bac. Surg. Univ. Lond., 1900; Hermann Peyer, Staats Examen Switzerland, 1899.

Obituary.

LEWIS.—On January 10, John Lloyd Lewis, Chemist and Druggist, Aberayron. Aged 36. Mr. Lewis, who served his apprenticeship with Mr. Parlby, chemist, of Swansea, passed the Minor in 1886, and on the death of Mr. J. P. Jones, chemist, of Aberayron, he took over that gentleman's business. About five years ago he decided to qualify as a medical man and became a student at the London Hospital. He had qualified in midwifery and was about to enter for the final examinations. He visited his wife and family during Christmas week, returning to London on January 1, and two days later he was found to be suffering from an attack of small-pox, from which he did not recover.

SLATER.—On December 80, Jonathan Slater, Chemist and Druggist, Wells. Aged 55.

SOUTHALL.—On January 11, Sarah Southall, widow of the late Thomas Southall, Chemist, Birmingham. Aged 100. Mrs. Southall, who was born on September 12, 1801, came of a family remarkable for its longevity. She was married in 1824 to Mr. Thomas Southall, who was one of the founders of the Pharmaceutical Society, and acted as first President of the Birmingham branch, and for many years afterwards they took an active part in the temperance movement. Mrs. Southall was the oldest member of the Society of Friends in Birmingham, and for seventy-seven years she was connected with the Society for Relieving Infirm and Aged Women, having acted in the capacity of hon. secretary, and afterwards as president, which position she occupied until the day of her death. On her hundredth birthday Mrs. Southall was in possession of all her faculties, her hearing was good, and with the aid of spectacles, she was able to read the newspapers, and keep herself conversant with the movements of the times. Amongst the grandchildren of Mr. and Mrs. Southall may be mentioned Mr. Thomas Southall Dymond, Mr. Frank Ransom of Hitchin, for many years examiner to the Pharmaceutical Society; whilst their grand-nephews, Messrs. Wilfred Francis Southall, Alfred William Southall, and Gilbert Southall, are directors of the firm of Southall Brothers and Barclay, Ltd.

THE STUDENTS' COLUMNS.

The Examination of Plants.

Though but few wild flowers are usually found in blossom in January, their very scarcity at this time is likely to encourage students who are proposing to begin the study of botany, since beginners are apt to be discouraged by too great a profusion of material. Moreover, many flowers, the structure of which illustrates important points, can be obtained from florists. The wild plants likely to be found in blossom at this time of year include *Capsella bursa-pastoris* (N.O. Cruciferæ), *Ulex europæus* (N.O. Leguminosæ), and *Senecio vulgaris* (N.O. Compositæ), while a naturalised plant—*Petasites fragrans* (N.O. Compositæ)—may be found in flower in the South o England.

In gardens, the student will probably find in blossom *Helleborus niger* (N.O. Ranunculaceæ), and *Jasminum nudiflorum* (N.O. Oleaceæ), while available greenhouse flowers include those of *Schizostylis coccinea* (N.O. Iridaceæ), *Convallaria majalis* (N.O. Liliaceæ), *Narcissus* sp. (N.O. Amaryllidaceæ), *Euphorbia jacquinæflora* (N.O. Euphorbiaceæ), *Dendrobium nobile* (Orchidaceæ), and other species. It will be seen therefore, that the study of several natural orders can be begun with advantage, even at this early period of the year. With regard to books, every beginner should procure a copy of Shirley Hibberd's 'Field Flowers' (Groombridge, 4s.), and after collecting as many wild flowers as possible, proceed to identify them by the aid of the descriptions and illustrations in that book. He should next examine each plant in detail, observing the following directions, which are adapted from Holmes's 'Botanical Note-Book' (Dulau, 1s. 6d.), a copy of which will also be found of great assistance in the practical study of field botany:—

Root.—To distinguish between a true root and an underground stem, the presence of scales and leaf-buds should be looked for; the direction in which it grows will also be some guide, as stems usually grow horizontally when underground.

Leaf.—In examining a leaf, the structure is generally seen with ease by holding it up to the light, but if the leaf be succulent, its venation may be discovered by pressing the juice out of it, or by cutting a thin slice out of the leaf.

Flower.—In pulling a flower to pieces, if it have separate petals and be sufficiently large to be held between the fingers, one side of it should be taken firmly between the finger and thumb of the left hand, and the other side pulled with the right hand, so as to get proper resistance to the leverage exerted in pulling a portion off. If the flower be too small to be treated in that way, it should be examined by a lens of about one inch focal distance, and the number of parts in the calyx and corolla noted first. It may then be pressed open with the point of a penknife, or with a stout needle stuck into a penholder, and the number of the stamens observed. In using a lens it is very necessary to let the light fall upon the object. In examining a flower nothing must ever be guessed at, but every point ascertained with certainty by careful examination.

Ovary.—The structure of the ovary will be best discovered by taking one from a flower of which the blossom is over, which will consequently be larger and better developed. A thin transverse section placed in a drop of water between two glass slides or held up to the light, will then reveal its structure; if very small, it should be looked at with a lens. In some plants the ovary looks like a flower-stalk; if, therefore, there does not appear to be any ovary inside the flower, the stalk below the flower should be cut open to see if it contains the seeds. In a large flower in which the parts are united, the flower should be slit open on one side only from below upwards, and not cut into two halves. In counting the number of parts in a flower, the number of divisions of the calyx and corolla, and the number of stamens, if fewer than ten, should be compared in more than one blossom, for some flowers will not infrequently have six parts instead of five in some of the blossoms.

Inflorescence.—In examining an inflorescence, if the flowers and buds appear to be opening neither centripetally nor centrifugally, but to be mixed up irregularly, the smallest possible branch of it should be taken off and examined, when it will be found to consist usually of three flowers, the central one of which is opening first, the inflorescence being therefore centrifugal. Sometimes, however, it consists of two flowers only, owing to the second lateral bud not being developed; but, upon taking another small branch with three flowers, the above arrangement will be noticed.

Seed.—The structure of a seed is best examined by soaking it in warm water for a few hours, when its coat may be removed and its arrangement of parts may be seen, with the aid of a lens if the seed be small. A few large seeds should be experimented upon first, such as a broad bean, nux vomica seed, croton seed, almond, orange pip, etc. Small slippery seeds may be placed in a drop of gum or varnish, and sliced when the liquid is dry.

The Construction of an Improvised Spectroscope.

To anyone interested in the subject, the following instructions for making a small spectroscope at a nominal cost may be of use. The finished article, which will be nearly identical in theory and principle of construction with the modern instrument used for the purpose, will serve to demonstrate the method of working with a spectroscope, and will show the more conspicuous spectroscopic phenomena, such as the bright line spectra of lithium, sodium, etc. The requisite materials for putting it together will cost about 2s. or 3s., and will comprise a prism, a small wooden box, a cardboard tube, and one of the small toy telescopes, a few inches in length, used by children. Starting with the box, a cigar-box will answer capitally; first remove the lid, then cut out from the middle of the bottom of the box a narrow slit, about 2 inches long and ½ inch wide. Over this slit place an ordinary microscopic 3 × 1 inch glass slide, cementing it down with coaguline, so that the slide will form a kind of window in the bottom of the box. On the outside of the slide now gum two pieces of dead-black paper, with perfectly parallel, sharp-cut edges, separated by a small space, so as to form a narrow slit. The top of the box must now be knocked out, the box itself stood upright on the table, and a candle placed in the back of it, with its flame on a level with the slit in the glass slide.

The glass prism, which can be purchased for a few pence at any optician's, is now mounted end up in a piece of cork, which is glued to a block of wood of sufficient height to bring the prism level with the slit. If one of the edges of the prism be now placed nearly opposite the slit, on looking sideways through the prism a narrow continuous spectrum will be observed. Viewed in this way, however, this spectrum will be too narrow to be of any practical use, and this is where the elaborate apparatus turned out by the optician evinces its superiority over the improvised article by the greater breadth given by it to this primary image of the spectrum on viewing it through a telescope, magnifying it about eight diameters. An adaptation of this method can be utilised by taking a cardboard tube, about 14 or 15 inches in length, and inserting in one end of it the small telescope previously referred to. The whole cardboard tube can now be mounted on a block of wood or any improvised stand that will bring it to a level with the spectrum. If the open end of the tube be now placed close against the prism, in such a position that a clear view of the spectrum is obtained in the centre of the field of the telescope and in sharp focus, the apparatus will be ready for use.

For the candle, which emits white light and, therefore, gives a continuous spectrum, now substitute a spirit lamp or Bunsen burner, the colourless flame of which gives no spectrum. If a trace of a volatile salt, such as NaCl, LiBr, or KBr, be introduced into the flame on a piece of platinum wire, bright lines corresponding to the metals present will be observed in various sections of the spectrum. For experimental purposes the abovementioned metallic salts are about the best, as they all give conspicuous lines—Na an intense yellow, the well-known D line, Li a brilliant line in the red, and K a well-marked line in the violet. Of course the construction of a piece of apparatus like the above may be modified in several respects, but there are certain essential features which must be included, the chief of which are, first, the slit between the prism and the source of light must be very narrow, and have parallel edges; secondly, the telescopic tube must be capable of rotation round the prism so as to get a better view of the various parts of the spectrum; thirdly, the prism itself must be in the position of minimum deviation; and, lastly, as much extraneous light as possible must be cut off from the spectrum by having the telescope tube close up to the prism.—S. E. Dowdy, M.P.S.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

CHELIDOXANTHIN. J. O. Schlotterbeck finds that the colouring matter obtained by himself and Watkins from *Stylophorum diphyllum*, and believed to be identical with the chelidoxanthin isolated from *Chelidonium majus* by Probst, really consists of berberine. Since the characters of the substance accord with Probst's description of chelidoxanthin, Schlotterbeck believes that the latter is nothing more than impure berberine. In order to settle the point he is now examining fresh plants of *C. majus* for berberine.—*Pharm. Review*, **20**, 4.

GUAIAFORM. F. G. Ehlert states that this substance was first prepared by Dr. G. H. Henning in 1898, and then named "geoform," but Brissonet shortly afterwards reintroduced it under the name of "guaiaform." It is formed by the condensation of two molecules of *o*-guaiacol and one of formaldehyde. It contains 95·38 per cent. of guaiacol, and is readily broken up into its components, while it yields a tannin compound, which has been named tannoguaiaform. Guaiaform itself is a tasteless yellow powder, with non-irritant, non-toxic, and general antiseptic properties. It is odourless when freshly prepared, but soon acquires a vanilla-like odour on keeping. The compound is insoluble in water or petroleum ether, but readily soluble in alcohol, ether, or hot benzene. It dissolves in potassium or sodium hydroxide solution, and can be precipitated unchanged therefrom upon acidulation.—*Pharm. Review*, **20**, 15.

PREPARING STERILISED CATGUT. C. A. Ball (*B.M.J.*, November 16, 1901) sterilises catgut by winding it firmly and evenly on a glass or lignum vitæ reel in a single layer, then placing the reel in a 5 per cent. solution of formalin and leaving it for twenty-four hours, after which it is removed and thoroughly washed in cold water. It is next dropped into boiling water and allowed to boil for five to ten minutes, according to the thickness of the gut, and finally stored in a solution prepared by dissolving mercuric chloride, 1, in boiled glycerin, 250, and methylated spirit, 1,000. The glycerin and spirit dehydrate the gut, while the former renders it pliable. The mercuric chloride impregnates the gut, previously swollen by boiling it with the formalin, at the same time hardening it sufficiently to prevent it twisting when moistened by the tissues during the process of stitching. Catgut prepared in this way is sterile, keeps well, and is said to be undiminished in strength; it is also pliable, knots nicely, and is absorbable. In a communication on the same subject, C. Y. Pearson points out that the object of using formalin is simply to enable the catgut to bear subsequent boiling in water and not to sterilise it, and he states (*B.M.J.*, December 21, 1901) that brittleness of catgut treated with formalin may be due to imperfect washing after treatment, or to the use of a stronger solution than 4 per cent. C. A. Ball, however, states (*B.M.J.*, January 4, 1902) that raw gut sometimes contains strands which are so brittle that they are unfitted for any form of preparation. Moreover, he adds, washing after soaking in formalin is only of use to get rid of dirt; it cannot affect the brittleness, as the subsequent boiling must dissipate all traces of formalin. If the gut be thoroughly sound and strong, any subsequent brittleness must be due to the use of a stronger solution of formalin than 5 per cent., or leaving it in the solution for more than twenty-four hours, or using too strong alcohol and too little glycerin for storing.

CAPSULES FOR INTESTINAL REMEDIES. A process for rendering gelatin capsules impervious to the fluids of the stomach, while retaining complete solubility in the pancreatic juice, has recently been patented in Germany. The capsules, preferably already filled, are placed for ten to twenty minutes in a 0·5 to 1 per cent. solution of allyl aldehyde or acrolein. They are then dried at from 30° to 50° C. By this treatment the gelatin is rendered entirely insoluble in warm water or the gastric juice, but is still capable of being digested by the pancreatic juice in the course of about two hours.—*Pharm. Era*, **26**, 625.

ADULTERANTS OF PEPPER. A. Mennechet describes the macroscopic characters, as well as the microscopical appearance of the elements, of the fruits of *Myrsine africana* and of *Embelia ribes*, which are used as adulterants of pepper. In addition, he mentions a simple chemical test which allows this admixture to be readily detected. A portion of the powder is extracted by maceration, or percolation, with ether. To the ethereal solution, a little water is added, followed by a few drops of ammonia. On shaking, a deep lilac-red coloration is obtained in the aqueous layer if either of the above-named fruits be present. Pure pepper gives no such colour.—*Journ. Pharm. Chim.* [6], **14**, 587.

DETERMINATION OF ARSENIC. The joint committee appointed by the Society of Chemical Industry and the Society of Public Analysts, with the view of deciding upon a standard method for the determination of arsenic, and especially of such small quantities as may be present in beer, has recommended that the Marsh-Berzelius method be adopted, as it is stated to give a distinct indication of one part of arsenious oxide in seven millions, with quantities of 20 Gm. of a solid, or 20 C.c. of a liquid. About 20 Gm. of zinc should be placed in a 200 C.c. flask of Jena glass, fitted with a 50 C.c. tapped funnel and an exit tube connected with one end of a drying tube containing a roll of dry paper or cotton-wool impregnated with lead acetate, next to which is placed a wad of ordinary cotton-wool, then a layer of granulated calcium-chloride, and finally another wad of plain cotton-wool. To the other end of the drying tube is attached a hard glass tube drawn out to a point, with an opening 0·092 inch in diameter. The zinc in the flask having been well washed with water, dilute hydrochloric or sulphuric acid is then run in and, after all the air has been expelled from the flask, as shown by the hydrogen flame appearing round, the flame of a Bunsen burner is applied beneath the hard glass tube to show whether a mirror is formed or not, more acid being added from time to time as required. If Jena glass be used throughout and all the materials used are arsenic-free, no mirror will be formed in twenty minutes, and the suspected material may then be added to the contents of the flask. Standard arsenical mirrors are prepared after adding to the generating flask in turn 2, 4, 6, 8, and 10 C.c. respectively of a hydrochloric acid solution of arsenious oxide, containing 0·001 Mgm. of As_4O_6 in 1 C.c. A separate tube must be used for each mirror and the hydrogen allowed to come off for twenty minutes before adding the arsenical solution, the Bunsen flame being under the hard glass tube all the time. After adding the arsenical solution, the Bunsen flame must be kept under the tube for another twenty minutes, in order that the mirror may be evenly deposited. The mirrors must be sealed in while the tubes are filled with hydrogen, and should then be mounted on white cards. Further details of the method, and the precautions to be adopted in certain cases, will appear in an early issue of the *Journal of the Society of Chemical Industry*.

Vol. 68. (Fourth Series, Vol. 14.) No. 1648.

DETECTION OF STEMS IN GROUND CLOVES.

E. B. Kenrick points out that chlorophyll is present in clove stems in considerable quantity, although absent from the clove-buds. In order to detect the presence of stems he suggests the following simple method: A weak tincture is made, and the absorption spectrum is examined for the characteristic bands of chlorophyll. Nearly all samples of cloves contain stems. Those should be picked out, ground up, and used for purposes of comparison.—*Analyst*, **26**, 291.

PHARMACOLOGICAL ASSAY OF DRUGS.

A. R. Cushny is of opinion that a pharmacological assay is a useful substitute for a chemical assay in the case of many remedies to which the latter is not applicable, and that it permits of a standard being found for those preparations, which is sufficiently constant and exact for therapeutic purposes. He adds that it is desirable that pharmacological assays should be made of preparations which fail to effect the desired therapeutic result unless given in quantities which act on important organs, and are liable to give rise to poisoning if unusually powerful preparations are dispensed unwittingly. It is pointed out that a pharmacological test—though not a quantitative one—for atropine is given in the British Pharmacopœia, and it is urged that pharmacological assays are as essential in the case of fluid extract of ergot and other galenical preparations as in that of serum.—*Am. Journ. Pharm.*, **74**, 1.

VOLATILE OILS IN CAPSULES.

W. G. Toplis recommends the use of starch powder as an absorbent when capsules are to be filled with volatile oils and, as an illustration of the method, explains how he proceeds when half a fluid drachm of terebene is ordered to be dispensed in twelve capsules. He places half a drachm of potato starch upon a pill tile, pours the liquid upon it, and incorporates it intimately by means of a spatula. The resulting mixture is very fluid, but on adding three or four drops of water and stirring briskly the mass at once begins to stiffen. A few more drops of water should then be stirred in, and the operation repeated, if necessary, until the mass becomes quite solid. It may then, by the aid of two spatulas, be formed into a rectangular figure, and subdivided into the requisite number of parts, which are next placed in the capsules. The whole operation need not occupy more than ten minutes, the capsules are easily sealed, and there is no risk of subsequent leakage. Arrowroot may be used instead of potato starch, but nearly twice the weight is required.—*Am. Journ. Pharm.*, **74**, 36.

BLINDNESS FROM WOOD ALCOHOL.

Dr. H. Moulton, in a paper read before the American Medical Association, says it is worthy of note that wood alcohol is the only substance which, when swallowed, invariably affects the optic nerve and the retina. Many cases of blindness following the use of wood alcohol are recorded, and an analysis of fifteen such cases has shown the striking identity of important symptoms. Unless the dose be sufficient to produce coma those symptoms do not manifest themselves before the second or third day, when nausea, vomiting, and headache supervene, while visual disturbances occur later, blindness becoming total within twelve to forty-eight hours of the time when the vision is first affected. The effects may pass off to some extent in a few days, but loss of sight recurs in a short time. The use of pilocarpine is said to counteract the effect of wood alcohol on the optic nerve to some extent; but the treatment should be commenced within a few hours of the onset of blindness.—*Druggists' Circular*, **46**, 3.

THE SALE OF POISONS AND THE SUGGESTED REFORM.*

BY ALGERNON WARREN.

Since 1868, when poison schedules were instituted by the Pharmacy Act, the public have enjoyed greater immunity from risk than heretofore, because the retailing of a number of poisons became restricted to registered chemists and druggists, who acquired by the nature of their business, and by the studies incumbent on them prior to qualification, an intimacy with their properties which other traders ordinarily did not possess. After the passing of the Act only those who were certified as being in business as chemists and druggists prior to its becoming law could sell such poisons as were scheduled without qualifying as registered chemists and druggists by passing the examination of the Pharmaceutical Society (unless they were qualified medical practitioners). That examination necessitated an intimate knowledge both of the nature of poisons and their sale regulations as legally enforced. Consequently it has, from the time of its institution, acted as a safeguard for the public. While admitting that the restrictions imposed upon the retailing of poisons and poisonous compounds have caused, and must still do so, a certain amount of inconvenience, it can be unhesitatingly asseverated that the general benefit to the public has been great. It is a proverbial saying that "opportunity makes the thief," and poisons vended unrestrictedly would certainly be purchased as a means to bad ends. Reference to the past affords evidence that this was recognised some centuries ago, and that, although more concise legal enactments touching their sale have been enforced during the last century both in England and in other countries, there are abundant instances in the Middle Ages of poison legislation. Shakespeare was alive to this, as is evidenced in "Romeo and Juliet," where the poverty-stricken apothecary acknowledges that he has "mortal drugs," but adds that "Mantua's law is death to any he that utters them." Sir Walter Scott, too, in "Kenilworth," has made Yoglan, the Jew drug-vendor, say, when foiled in his attempt to palm off a spurious article on Wayland Smith, "I 'ave no better than that—or if I 'ave, I will not sell it without order of a physician."

But now, certain members of His Majesty's Privy Council are engaged on an appeal made by a body who are agitating that poisons required for certain purposes shall, under special conditions, be retailed by others than registered chemists and druggists.

A Bill has been promoted, intituled "An Act to alter and amend the law relating to the sale of Poisons and Poisonous Compounds for Agricultural and other trade purposes."

Its general purport is that poisons for other than therapeutic or medicinal purposes shall be permitted to be sold in original sealed packages by ordinary traders, provided that they pay Government for a licence, which shall enable them to do so subject to their keeping entries of the sales, so as to be under the control and supervision of the Commissioners of Inland Revenue.

Only those who have had experience know how hardly the officers of excise are worked in the present day, and the inspection which would be incumbent were such licences instituted could scarcely fail to necessitate a good deal of labour at the expense of the taxpayer. Some of those who are favouring the Bill put their names in 1900 to a Parliamentary petition alleging, amongst other reasons for preferring their request, "That many of the poisonous compounds used for trade or technical purposes are of a heavy or bulky character, and it frequently happens that pharmacists have neither room nor accommodation for the storing of such goods." Also, "That in many of the country districts a pharmacist is not to be found within a radius of some miles, and it would be materially to the convenience of many of us, the undersigned farmers, gardeners, and others, were we able to obtain such compounds from the seedsmen, nurserymen, corn dealers, iron and hardware dealers, agricultural agents, and other tradesmen in our respective districts."

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* From the *Western Daily Press.*

It is certain that the first statement, viz., lack of accommodation and storing-room, will be refuted by a large number of pharmacists. Rent in the country and in agricultural centres is not such a consideration as in a crowded city, and where there is a demand it is not likely to be diverted for lack of those requirements. Again, it must be remembered that nowadays wholesale merchants and manufacturers enable retailers to sell large quantities of goods by delivering the same not to their premises, but to their order at some specified place.

As regards the allegation that in many of the country districts a pharmacist is not to be found within a radius of some miles, it would have been less sweeping had the word "many" been converted into "some." The registered chemists of the kingdom are on official authority stated to number some seventeen thousand odd, and villages where one is not to be found are the exception.

It cannot be denied that it behoves the rulers of a nation, in the interests of humanity, to take all feasible steps towards preventing death by misadventure and suicide; and should the proposed innovation receive countenance, there would be grave reasons for apprehension.

Many a man will, on the impulse of the moment, be tempted into doing what he would be deterred from on reflection; and a difficulty in obtaining poison may be his salvation. Rather, then, let a hundred be hampered by inconveniences connected with the procuring of poisons than one be lured to self-destruction by facilities readily accorded to him by legislation. There is abundant evidence that wherever poisons are obtainable there are cases of abuse, as well as of use. Periodically cases of arsenical poisoning are reported, and it is not infrequently found that the perpetrators have been workmen in factories who were entrusted with arsenic for special processes of manufacture.

A chemist, who recently published a circular embodying some extracts from an article on "Dangers of the Drug and Chemical Trade," which had appeared in a well-known magazine, and which he thought his customers might note to advantage, headed it rather appropriately with a Shakespearean quotation from Henry IV., Part I., Act 2, Scene III.:—

Out of this nettle, danger,
We pluck this flower, safety.

Those who have had, as the registered chemist must have, an intimate acquaintance with the nature of poisons from the outset of his career, may do this. But the element of safety will be conspicuous by its absence should poisons and poisonous compounds be freely vended over the counter of the general dealer, who has had no examination to pass touching their nature and properties. Sealed packages are capable of being perforated, and the contents may be withdrawn for other purposes than those for which they are destined, so this proposed stipulation is inadequate. If, too, a poison be obtained from a qualified pharmacist and misused, he, on being appealed to, has at his fingers' ends a knowledge of the best antidotes. But the seedsman or ironmonger would in nine cases out of ten be helpless to assist, if called upon to counteract the deadly effect of a poison purchased ostensibly for agricultural or horticultural purposes, but misapplied.

As it is, the position of the chemist and druggist is not one of roses. At a cost of close and assiduous brainwork he has to spend years in acquiring the knowledge requisite for the passing of the examination instituted by the Pharmaceutical Council. He must exercise vigilance daily. Unlike most other traders he is forced to stock things for sale which are indispensable to his calling, and which, nevertheless, he may not sell as he likes or thinks proper, but must vend strictly in accordance with stringent legal enactments, and if he do otherwise he may be brought before a magistrate on a charge of manslaughter. His mental strain is great, and a mistake on his part may lead to fatal consequences. The days of uniform large profits on his small turn-over are gone from him for ever, and if his chance of a livelihood be diminished by a measure calculated to endanger the safety of the public for the convenience of a minority, there is every reason for anticipating that some of those who now advocate it will live to regret that they ever did so.

NOTE ON ICHTHYOL.*

BY DAVID HARLEY.

The word ichthyol is derived from the Greek word *Ichthus*—a fish, and when we know that the substance is obtained from a mineral oil distilled from a bituminous quartz containing fossil deposits—chiefly fish—we see the significance. The mineral oil is treated with sulphuric acid and neutralised with ammonia—the product being ammonium sulpho-ichthyolate—a complex sulphur compound, the formula for which is said to be: $(NH_4)2C_{28}H_{36}S_3O_6$. This is the preparation which is distinctively known as ichthyol, although there are other similar combinations of sulpho-ichthyolates prepared with lithium, sodium or zinc. It is semi-liquid, dark-brown, tarry looking substance with a strong disagreeable odour. On heating it readily loses bulk, puffing up, liberating gaseous vapours, and carbonising, in fact, in appearance and smell it is very similar to boiling pitch or asphalt. On exposure to the atmosphere it thickens and sets like a varnish; this may be noticed when a drop is left on the side of the stock bottle. It is worthy of note that it is one of the few substances which is freely soluble in water, and at the same time quite readily miscible with fats and oils. During the last few years it has been praised by various German authorities as an external remedy, and also for internal administration, and we have to deal with it in various forms at the dispensing counter.

OINTMENTS.—This is the most common form in which the drug is used. It forms an ingredient of ointments and pastes in many combinations. An ointment containing as much as 40 per cent. of ichthyol, made up with lanoline, makes a satisfactory preparation.

AQUEOUS SOLUTIONS, sometimes with the addition of glycerin or alcohol, for use as gargle, injection, lotion spray, etc., are common.

ICHTHYOL COLLODION as a paint is used, and the substance itself is recommended for the same purpose.

PESSARIES containing 10 per cent. are often ordered, and they are now generally prepared with cacao butter as a base. When introduced several years ago they were made with gelatin, but these were found unsatisfactory on account of their insolubility, and a note read by Mr. Hill at a meeting here (see *Pharmaceutical Journal*, March 18, 1899), gives proofs that the combination of ichthyol and gelatin was not all that could be desired. In reference to this point a query appeared in the *Chemist and Druggist* for November 23, 1901. Probably the degree of solubility of the gelatin and ichthyol is affected by the length of time the pessaries are kept, and the conditions of hospital practice are usually very different from individual cases where a patient may procure a supply, and perhaps keep them for some time before use. Pessaries of the same strength made with cacao butter are very satisfactory, and give little or no trouble in making—as little heat as possible being used.

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* Read before the Edinburgh Chemists,' Assistants,' and Apprentices' Association, on Wednesday, January 15, 1902.

Suppositories are not often prescribed, but they can be prepared in the same manner as the pessaries. Martindale suggests the addition of a little wax to give firmness, but a suppository containing 2 grains of the drug and cacao butter alone answers very well. The melting point of cacao butter and wax mixtures is usually higher than the temperature of the body, but it is said to be considerably lowered by the addition of ichthyol.

Dusting Powders, Plasters, and Soaps are other forms in which it is exhibited for skin medication.

For Internal Administration a usual prescription is:—

Ichthyol .... ʒss.
Aq. Destil .... ʒiss.
Dose—20 to 25 drops.

This forms a clear brown solution with a slightly acid reaction. It is astonishing to find that although both Martindale's 'Extra Pharmacopœia' and Squire's 'Companion' mention that ichthyol is entirely soluble or readily miscible in water, the 'Art of Dispensing,' even in the last edition, gives it as a substance insoluble in water. A mixture containing—

Ichthyol .... ʒi.
Potass. Brom.............................. ʒii.
Aq. ....ad ℥iii.

requires a little care. On mixing the two solutions a turbid brown precipitate falls, and eventually settles as a sticky mass. This may be a sulpho-ichthyolate of potash formed which is not so soluble as the ammonia compound, and is thrown out. The addition of a little mucilage makes a more presentable preparation.

Pills containing 2 or 3 grains are sometimes ordered. Equal parts of ichthyol and liquorice powder rubbed up together and set aside for an hour or two before being rolled off makes a fair pill. To make a small pill spread the ichthyol on a slab, and heat gently for a little, until a suitable consistency is acquired, when the mass may be rolled off without any addition whatever. The sodium compound might be preferred in this combination, but in the heating necessary the ichthyol does not appear to suffer, water merely being driven off.

Capsules and **Tablets** are other convenient forms for administration. Judging by the many forms in which this substance has been used and the variety of cases in which it has formed treatment it would appear to be held in good repute by the medical faculty, and it would be interesting to know wherein its therapeutic value lies. It is said to contain from 10 to 15 per cent. of sulphur in an easily assimilable condition.

Antiseptic and alternative properties are attributed to it, and in chronic eczema, lupus, and various skin affections, gout, rheumatism, gastric catarrh, constipation, and even phthisis, beneficial results have been reported from its use.

ANALYTICAL NOTE.

Cold Nitric Acid Test for Albumin in Urine.—A useful modification of the cold nitric acid test—Heller's test—for albumin in urine has been suggested by Boston, and consists in allowing a little of the urine to flow into a tube of small bore by capillary attraction. The outside of the tube is then carefully washed free from urine in a little water—holding a finger on the tube to prevent escape of urine. The tube is then immersed in a test tube of nitric acid. The finger is carefully removed from the tube, allowing the gradual ingress of acid from the bottom. The greater density of the acid forces the urine slowly up the tube. If albumin be present a slight but always distinct cloudiness is produced at the point of contact.—*Merck's Rep.*, **10**, 367.

THE PREPARATION OF COMPRESSED TABLETS.

BY AN ORDINARY PHARMACIST.

(Continued from page 47.)

As already explained (see *ante*, p. 46), ammonium chloride and other substances which are readily obtainable in the form of a fine granular powder, can be compressed into tablets without further preparation. Most other substances can be suitably granulated after being finely powdered, by adding to them 10 per cent. of their weight of powdered sugar and 5 per cent. of powdered gum acacia, while the addition to the granulated material of 5 to 10 per cent. of finely powdered starch facilitates rapid disintegration in the case of salol and other insoluble substances. As a rule, also, it is advantageous to pass the material twice through a sieve (usually No. 20), once directly after moistening, and again after drying the granulated powder, any granules which may adhere while moist being separated on passing through the sieve a second time, and the material being thus left in a more satisfactory condition for compression. If the addition of powdered starch or a lubricant be necessary, the twice-sifted material should be spread upon paper, the starch or lubricant scattered or, if a liquid lubricant be used, sprayed over the granules, and the whole then stirred thoroughly with a spatula, after which it may be lightly shaken up in a wide-mouthed bottle.

It is imperative that the granulated powder should be quite dry before compression, otherwise, as already stated, it will adhere to the dies, fail to feed regularly, and compress unevenly. As a rule, light powders such as charcoal require no lubricant, granulation with powdered sugar sufficing to obtain them in the desired condition. In fact, the use of lubricants will often be found unnecessary, if care be exercised in preparing the materials for compression. Extracts and tinctures must be brought to the condition of a fine granular form before they can be dispensed in tablets, while salts containing water of crystallisation may require to be dehydrated, and deliquescent or hygroscopic substances will need the addition of powdered gum acacia in order to render them fit for compression. Special precautions must be observed in the preparation of tablets intended for the preparation of solutions for hypodermic injection, everything being kept, as far as possible, in a thoroughly aseptic condition. Powdered sugar of milk is especially suitable as a diluent for potent remedies and, when that is used as a basis for tablets, the material to be granulated should be moistened with diluted syrup, prepared by adding two parts of recently-boiled water to one part of Syrupus, B.P.

In the following notes, which have been compiled from various sources, such details are given regarding the procedure to be followed in particular cases as should enable pharmacists who have carefully studied the general instructions already given to prepare satisfactory compressed tablets of any drug which may be prescribed in that form. Many substances, of course, cannot with advantage be administered in tablet form, but such are sometimes ordered by medical practitioners, and it then becomes the pharmacist's duty to endeavour to present them in such a condition that the best results possible in the circumstances may be attained. Types of most, if not all, of the cases likely to be met with are here presented, and useful suggestions, at least, may be found by dispensers in search of information, if there should at any time be occasions when complete details prove to be lacking. Most of the information on the subject of compressed tablets has been published originally by American pharmacists, prominent among whom are Coblentz, Edel, McFerran, and Remington, but this is the first occasion on which details regarding so many special cases have been presented at one and the same time, in a convenient form for ready reference. Any comments and suggestions addressed to the Editor will be welcomed by the compiler of the notes.

Manipulation in Special Cases.

Acetanilide.—Reduce to fine powder, to which add one-tenth its weight of powdered sugar, then add a few drops of syrup, mix thoroughly, and complete the moistening with water, after which the granulated mass should be passed through a No. 20 sieve and dried. When dry, pass through the sieve again, spray with ether-paraffin solution, stir thoroughly with a spatula, and allow to dry before compressing. If the material should adhere to the dies, add a little powdered French chalk, purified as described at page 47, just before compressing.

Acetanilide (Compound).—Mix acetanilide, 350 gr.; caffeine, 50 gr.; sodium bicarbonate, 100 gr.; powdered sugar, 30 gr.; and gum acacia, 25 gr., all in fine powder. Moisten the mixture with water, pass through a No. 20 sieve, dry, again pass through a sieve, and lubricate with ether-paraffin solution before compressing. Make 100 tablets.

Acetanilide and Salol.—Mix equal weights of acetanilide and salol, in fine powder, add to the mixture one-tenth its weight of powdered sugar, and proceed as in the case of acetanilide.

Aconite (Extract of).—See extracts and notes on neuralgic tablets.

Aloes and Myrrh.—Mix powdered aloes, 4; powdered myrrh, 2; and compound powder of cinnamon, 1. Moisten the mixture carefully with 70 per cent. alcohol, and proceed as in the case of acetanilide (compound), except that the lubricant can be omitted if the mixture has been moistened and granulated properly.

Aloin.—Mix the powder with five times its weight of powdered sugar of milk, add a few drops of diluted syrup (syrup, 1; water, 2), mix thoroughly, and complete the moistening with water. Next, granulate the mass by passing through a No. 20 sieve, dry, again pass through the sieve, and lubricate with French chalk or ether-paraffin solution, as preferred. Or, if preferred, the mixture may be moistened with 70 per cent. alcohol instead of water, in which case the powder will dry more rapidly.

Aloin, Belladonna, and Strychnine.—Mix aloin, 20 gr.; strychnine, 1⅔ gr.; powdered extract of belladonna, 12½ gr.; powdered sugar of milk, 100 gr. Moisten with water, pass through a No. 20 sieve to granulate, and dry. Again pass through the sieve, lubricate with French chalk, and make 100 tablets.

Alum.—Dry thoroughly and reduce to fine powder, to which add one-twentieth its weight of powdered gum acacia. Then moisten with water, pass through a No. 12 sieve, dry and powder the granules, add one-tenth their weight of cane sugar, and moisten with just enough water to enable the mixture to pass again through the sieve. Allow the granules to dry spontaneously, complete the drying by the application of heat, then pass the mixture through a No. 20 sieve, lubricate, if necessary, with powdered boric acid, and compress.

Alum (Compound).—Mix exsiccated alum, 175 gr., with zinc sulphate, 200 gr., dry thoroughly by the application of heat, and reduce the mixture to fine powder. Then add morphine sulphate, 4 gr.; hydrastinine hydrochloride, 8 gr.; powdered sugar, 40 gr. Moisten with water, pass through a No. 20 sieve, then dry thoroughly, and again pass through the sieve. Lubricate, if necessary, with powdered boric acid, and make 100 tablets.

Ammonium Chloride.—Reduce to a finely granular condition by the aid of a little water, then compress without further preparation.

Ammonium Chloride and Liquorice.—Mix powdered ammonium chloride, 200 gr.; powdered extract of liquorice, 800 gr.; oil of anise, 5 drops. Moisten the mixture with water and compress without further preparation.

Ammonium Chloride and Potassium Chlorate.—Mix equal weights of the finely granular powders by the aid of a spatula, moisten the mixture with water if necessary, and compress without further preparation.

Antipyrine.—Proceed as in the case of acetanilide and substances of similar nature.

Arsenious Acid.—Proceed as in the case of aloin. See also note on neuralgic tablets.

Balsams.—Mixtures containing balsams do not usually require the addition of an adhesive, and should be moistened with alcohol prior to granulation.

Belladonna (Extract of).—See aloin, belladonna, and strychnine; also notes on extracts.

Benzoic Acid.—See note on brown mixture tablets, of which the acid constitutes an ingredient.

Bismuth Salicylate.—Proceed as in the case of acetanilide.

Bismuth Subgallate.—Proceed as in the case of acetanilide and bismuth salicylate.

Bismuth Subnitrate.—Proceed as in the case of acetanilide and bismuth salicylate.

Bismuth Subnitrate and Pepsin.—Mix finely powdered pepsin, 100 gr., with bismuth subnitrate, 500 gr., and powdered sugar, 100 gr. Moisten the mixture very carefully with water, pass through a No. 20 sieve, dry, and again pass through the sieve. Finally, lubricate with French chalk or ether-paraffin solution and make 100 tablets.

Brown Mixture.—Mix thoroughly, powdered extract of liquorice, 300 gr.; powdered opium, 5 gr.; benzoic acid, 5 gr.; powdered camphor, 5 gr.; oil of anise, 5 drops; tartar emetic, 2½ gr. Moisten the mixture with water, pass it through a No. 20 sieve, dry, again pass through the sieve, and make 100 tablets.

Bronchial.—Powder balsam of tolu, 20 gr., by rubbing it with sugar, 300 gr., cooling the balsam, if necessary, with ice; then add oil of sassafras, 10 minims; oleo-resin of cubebs, 20 gr., and powdered extract of liquorice, 700 gr. Moisten with 70 per cent. alcohol, lubricate with ether-paraffin solution and a little French chalk, then compress into 100 tablets. See also throat and voice tablets.

Caffeine.—Proceed as in the case of aloin and other potent remedies.

Caffeine and Acetanilide.—See note on acetanilide (compound) tablets.

Calcium Sulphide.—Proceed as in the case of aloin and other potent remedies.

Calomel.—Proceed as in the case of aloin and other potent remedies.

Calomel and Santonin.—Mix calomel and powdered santonin, each 100 gr., with powdered sugar of milk, 300 gr., then moisten the mixture with water, and proceed as in the case of acetanilide. Make 100 tablets.

Calomel and Sodium Bicarbonate.—(1) Mix sodium bicarbonate, 630 gr., with powdered gum acacia, 30 gr., moisten the mixture with water, pass it through a No. 40 sieve, and place it in a wide-mouthed bottle. Then add calomel, 90 gr., shake until all the granules are coated, and finally compress. (2) Mix calomel, 100 gr., with powdered sugar, 10gr., moisten with water, pass the mixture through a No. 20 sieve to granulate, and dry. Next, mix sodium bicarbonate, 100 gr., with powdered gum acacia, 10 gr., moisten the mixture with water and granulate as before. Finally, mix the two lots of granules, reduce them to fine powder in a mortar, moisten with 70 per cent. alcohol, pass through the sieve to granulate, then dry and make 100 tablets.

Camphor.—Proceed as in the case of balsams. See also note on brown mixture tablets.

Camphor (Monobromated).—Reduce to a finely granular condition and pass through a No. 20 sieve before compression.

Charcoal.—(1) Add to the finely-powdered charcoal 25 per cent. of powdered sugar, moisten well with water, and pass through a No. 12 sieve. Dry the granules, reduce them to powder, pass it through a No. 60 or No. 80 sieve, and compress without the addition of a lubricant. Sometimes, however, a solution of gelatin is employed instead of sugar, and a little French chalk should then be used as a lubricant. (2) Mix finely-powdered charcoal, 500 gr., with powdered sugar, 100 gr., and powdered gum acacia, 40 gr. Moisten well with water, pass through a No. 20 sieve, dry, again pass through the sieve, lubricate with ether-paraffin solution if necessary, and make 100 tablets. (3) Add to the finely-powdered charcoal 5 per cent. of powdered gum acacia, moisten with liquid glucose diluted with 25 per cent. of water, then pass through a No. 20 sieve, dry, and again pass through the sieve before compressing.

Chloralamide.—Proceed as in the case of acetanilide and antipyrine.

Cinchonidine.—Proceed as in the case of acetanilide and antipyrine.

Cocaine Hydrochloride.—Mix cocaine hydrochloride, 225 gr., with powdered sugar, 30 gr., moisten with water which has been recently boiled, and granulate as in the case of acetanilide, but lubricate with 1 to 2 per cent. of powdered boric acid. Make 100 tablets. One tablet dissolved in a fluid drachm of distilled water will produce a 4 per cent. solution (approximately) of cocaine hydrochloride.

Codeine.—Proceed as in the case of aloin and other potent remedies.

Creosote. Add sufficient powdered starch to absorb the liquid, then proceed as in the case of aloin.

Cubeb Oleo-Resin.—See note on bronchial tablets, of which this oleo-resin constitutes an ingredient.

Deliquescent Substances.—Add powdered gum acacia, in the proportion of one-tenth the weight of substance, and moisten with water.

Digitalin.—Proceed as in the case of aloin and other potent remedies.

Effervescing Mixtures.—(1) Granulate the constituents of the mixture separately and mix the granules in a perfectly dry condition, just before compressing. (2) Proceed as in making an effervescent salt, granulate with 70 per cent. alcohol, pass through a No. 20 sieve, then dry and compress.

Ergotin.—Mix with a small quantity of powdered starch, then proceed as in the case of aloin.

Dover's Powder.—Add a few drops of diluted syrup (syrup, 1; water, 2), mix thoroughly, complete the moistening with water, pass through a No. 20 sieve and dry. Again pass through the sieve, lubricate if necessary, and compress.

Extracts (Liquid).—(1) Evaporate to a syrupy consistence and then absorb the excess of water by the addition of about 25 per cent. of powdered starch, leaving the mixture sufficiently moist to be of a proper consistence when granulated, after which proceed as in the case of acetanilide, adding a lubricant if necessary. (2) Evaporate to the condition of a very soft extract, add a small quantity of powdered starch to absorb the excess of water, then add sugar of milk and proceed as in the case of aloin.

Extracts (Powdered).—(1) Add 5 to 10 per cent. of powdered starch, then mix with 10 per cent. of powdered sugar and 5 per cent. of powdered gum acacia. Moisten the mixture with water or 70 per cent. alcohol, pass through a No. 12 sieve to granulate, then dry, pass through a No. 20 sieve, add a lubricant if necessary and, finally, compress. (2) Proceed as in the case of aloin.

Extracts (Solid).—(1) Rub to a syrupy consistence by the aid of a little water, then proceed as in the first method for liquid extracts. (2) Rub smooth with alcohol or other suitable liquid, according to the nature of the extract, absorb the excess of liquid by the addition of sufficient powdered starch, then add sugar of milk, and proceed as in the case of aloin.

Gums.—Mixtures containing gums require similar treatment to those containing balsams.

Hydrastine Hydrochloride.—See notes on alum (compound) and lead (compound) tablets.

Hygroscopic Substances.—Proceed as in the case of deliquescent substances.

Hypodermics.—(1) Powdered sugar of milk may be used as a diluent, and the mixture should then be moistened with diluted syrup (syrup, 1; water, 2), but dried sodium sulphate, sodium chloride, or ammonium chloride will frequently be found preferable. Purified salts should alone be used, and all the materials should be thoroughly aseptic, water used for moistening having been recently boiled. Powdered boric acid is the most suitable lubricant, but the quantity used should not exceed 2 per cent. (2) Use powdered sugar as a diluent, moisten the mixture with 80 per cent. alcohol, and use powdered boric acid (1 to 2 per cent.) as a lubricant.

(*To be concluded.*)

ROYAL INSTITUTION.

At a meeting held on Friday, January 17, the Duke of Northumberland, President, took the chair, and Lord Rayleigh delivered a discourse on

The Interference of Sound.

Illustrating his remarks throughout by experiment, the lecturer first explained in general terms what was meant by interference. When two causes produced opposite effects so that they became mutually neutralised this was not, properly speaking, interference, as each produced their own natural effect; this might be compared to assets and liabilities, which, if equal, cancelled each other but did not interfere with their full existence. The source of sound employed in the experiments is known as a bird-call, an instrument which emits sounds of short wave length, and of such high pitch as to be inaudible to the human ear. A sensitive flame was used, which although unaffected by ordinary sounds such as a vibrating tuning-fork, immediately responded to a hiss or the bird-call. By means of this apparatus the wave length could be measured. A reflector placed behind the flame produced stationary waves, and it was shown that in these there were alternately points (nodes) where there was no motion to and fro, and points (loops) where the maximum vibration occurred. The flame responds most at the loops, and least at the nodes—the opposite being the case if the ear is substituted—and as the distance between loop and node is half a wave length it only remained to observe the points of maximum and minimum response, and then calculate the wave length. This phenomenon might be called a sort of interference. A more complete interference is obtained when sounds are travelling in the same direction, but out of step. To illustrate this a large glass screen with a circular hole in the centre was interposed between the source of sound and the flame, and the distances were adjusted till the flame was steady. Then if the central portion of the hole was blocked the flame was affected at once; again, if the outer portion was shut off, leaving only the centre, a like effect was produced, showing that the outer and inner portions act differently at that particular distance.

Lord Rayleigh went on to speak of fog-horns, remarking that interference had a very important practical bearing in relation to fog-signalling. The form commonly in use was the conical horn; that is, of course, having a circular aperture. Whilst experimenting for Trinity House it had occurred to him that, on theoretical grounds, an elliptical aperture would be better. Accordingly horns of this kind were made, and the results were very satisfactory. The object in fog-signalling is to spread out the sound horizontally as much as possible, and to avoid dispersing it high up above the sea level. In order to effect this the ellipse is pointed with the long axis exactly vertical. This was beautifully illustrated by means of a model, to scale, showing what a wide angle the sound is spread through by this form of apparatus, and also that the greatest effect is produced when the axis is exactly vertical, a great falling off being exhibited by the flame when the ellipse was turned through a very small angle. The reason for this, at first sight, remarkable effect, was because when the long axis was vertical the starting point from all parts of the aperture was approximately the same; they, therefore, started in step; but if a little out of the vertical then part of the sound starts a distance behind the other, thus producing interference or antagonism.

The phenomenon of the "silent area" was next discussed. Sometimes a sound could be heard a mile away, but on going out further to sea in a straight line the sound was lost, but on proceeding still further it was again recovered. The most obvious explanation is that the phenomenon is due to interference, because although there is only one source of sound, if the sea is smooth its surface acts as a reflector, hence if the direct sound and the reflected sound are not in the same phase then interference occurs. That this was a possible explanation was shown by experiment, a board being used to represent the surface of the sea, when the reflected sound neutralised the direct. Lord Rayleigh, however, was not quite satisfied that this was the true explanation, because the height of the observer from the reflecting surface would make a difference, and he had tried going up to the masthead and near the surface of the sea without being able to recover the sound. Experiments were then shown in which the original source of sound was split in two, using two cones. Again it was a matter of distance, and a slight alteration of position influenced the response of the flame; they could be adjusted to act together or in antagonism. That the density of the medium through which the sound passes also exerts a great influence was illustrated by allowing sound from one cone to pass through carbon dioxide, whereby it was retarded.

Unveiling a Bust of Sir Frederick Bramwell.

At the conclusion of the lecture a very interesting ceremony took place, when the Duke of Northumberland unveiled, and, on behalf of the subscribers, presented a bust by the late Mr. Onslow Ford, of Sir Frederick Bramwell, who for fifteen years had held the office of Honorary Secretary to the Institution. It was, said His Grace, the desire of the managers and their friends to present this bust as a token of the high esteem in which they held him personally, and as an appreciation of his services to that Institution. Sir James Crichton-Browne, Treasurer, having accepted the bust on behalf of the members.

Sir **Frederick Bramwell** said he felt it difficult to make any adequate reply. He was well into his 84th year, and at that age some things were lost, amongst others being the faculty of blushing, otherwise he would not have been able to sit still and listen to all the laudatory remarks which had been made. He was pleased that the presentation had taken that form, as he thought the work of the world was done by steady plodding, mediocre men, and it was as well to encourage them occasionally. He referred in touching terms to the sittings for the bust, which at first he had regarded with the utmost repugnance, but which afterwards became a real pleasure to him, and out of which ripened a deep friendship for the genius under whose hands the clay gradually grew into a likeness of himself. The death of Mr. Onslow Ford had been a source of great sorrow to him.

CHEMICAL SOCIETY.

At a meeting of this Society, held on Thursday, January 16, Professor **Emerson Reynolds**, President, occupied the chair After the minutes had been read and confirmed and other business disposed of, a paper was read in abstract by one of the secretaries on the

Radio-activity of Thorium Compounds,

the authors, E. Rutherford and F. Soddy, being resident in Canada. was shown that in addition to the radiation in straight lines thoria possessed a property of emanation which was communicated to a gas passed over the substance, the gas retaining the characteristic property when no longer in contact with the thoria. The latter property of emanation could be destroyed by ignition, whilst it was found the straight line radiation was unaffected. It was found, however, that on being exposed to the air for a short time the property was restored, even when the ignited thoria was kept in contact with a small quantity of air in a sealed tube almost as great a degree of emanation was restored as when fully exposed to the atmosphere. By precipitating thoria from solution by ammonium hydrate minute quantities of a body—designated ThX—were obtained from the residual liquid. This substance was found to be very much more active than the original thoria, whilst the precipitated thoria was correspondingly less active. This highly active body was also obtained by washing the original thoria with distilled water. The authors were not able to obtain sufficient of the substance to make any investigation as to its chemical nature, but considered that it might possibly be allied to the argon family.

Dr. **Chattaway** next discussed the

Constitution of Hydrocyanic, Cyanic, and Cyanuric Acids.

Although these acids have been studied for a long time with a view to elucidating their structure, there has as yet been nothing very conclusive shown in favour of either of the possible formulæ, because alkyl compounds could be obtained which corresponded to either formula. The formulæ assigned by Hofmann to these bodies were referred to, who pointed out that cyanic and cyanuric acids contained the hydroxyl grouping; in the case of cyanuric acid the alternate single and double linking of nitrogen and carbon was considered correct reasoning from the relation of the acid to the chloride in which it was thought that the halogen was attached to the carbon. Compounds containing halogen attached to nitrogen behave in a manner quite distinct from those in which halogen is attached to carbon. It is on the ground of its similarity of behaviour with the former class that the authors base their theory of the amino formula for cyanuric acid. Drs. Dobbie, Hartley, and Lander had also thrown doubt on the formula given by Hofmann to this body.

The nitrogen halogen compounds react in the following way:—

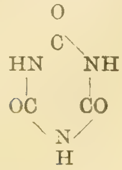
$$\rangle\mathrm{N-Cl} + \mathrm{KOH} = \rangle\mathrm{N-H} + \mathrm{KOCl}$$

$$\rangle\mathrm{N-I} + \mathrm{HI} = \rangle\mathrm{N-H} + \mathrm{I_2}$$

$$2\left(\rangle\mathrm{N-I}\right) + \mathrm{H_2S} = 2\left(\rangle\mathrm{N-H}\right) + \mathrm{S} + \mathrm{I_2}$$

$$2\left(\rangle\mathrm{N-I}\right) + \mathrm{H_2SO_3} + \mathrm{H_2O} = 2\left(\rangle\mathrm{N-H}\right) + \mathrm{H_2SO_4}$$

In the course of their work the authors had obtained a new substance from cyanuric acid by the replacement of the three hydrogens. This was very interesting in its behaviour towards various reagents, and it was hoped that this might be of value in throwing more light on the subject. Treated with caustic potash solution cyanuric acid and potassium hypochlorite were formed. By the action of hydrochloric acid cyanuric acid is also formed with the evolution of chlorine. The authors conclude that the following formulæ are correct:—


Cyanuric Acid.

$C \equiv N - OH$

Cyanic Acid.

$C \equiv N - H$

Hydrocyanic Acid.

In the discussion which followed, Dr. DOBBIE said that these results confirmed those obtained by himself and his colleagues by spectroscopic methods. When bodies containing carbon linked to nitrogen by alternate single and double binding, and as to whose structure no doubt could be entertained, were examined spectroscopically they showed marked selective absorption in the ultra-violet spectrum, whilst those in which single linkings only existed no such selection was observed. He asked what formula was proposed for the isocyanurates as the spectrum precluded the use of the single and double linking for these.

Mr. GROVES suggested that the new substance which had been obtained might be an organic hypochlorite.

Dr. LAPWORTH did not think that the structure had been definitely established.

Dr. FORSTER pointed out that some of the reactions cited by the authors argue as much in favour of one formula as another.

Dr. CHATTAWAY, in reply, said he did not consider it likely that the substance could be an organic hypochlorite, as it was an exceedingly stable substance. He was not prepared to suggest a formula for the isocyanurates.

The PRESIDENT referred to the ease with which these bodies undergo tautomeric change, thereby greatly complicating the whole question.

Mr. MOORE then described a

MODIFICATION OF THE ZEISEL METHOD.

Having pointed out that the great disadvantage in the present method lay in the time which the apparatus took to fit up, he proceeded briefly to indicate the form of apparatus used. The chief point about this was a special upright condenser, which was much more efficient than the ordinary Liebig, the usual potash bulbs containing amorphous phosphorus and water are also done away with. It was not found satisfactory for volatile substances.

Mr. BALL then directed attention to a

COLOUR REACTION OF HYDROXYLAMINE,

which he proposed to use as a test for that substance. If a small quantity of solution of hydroxylamine hydrochloride is boiled with one or two drops of yellow ammonium sulphide, and strong ammonia then added, a beautiful purple coloration is developed, which is intensified on the addition of alcohol. Hydrazine does not give the colour, and the test is a very delicate one for hydroxylamine, and may be used to detect that body in the action of nitric acid on metals, etc. The coloured body is soluble in ether, also in acetone, in which it is most stable.

The PRESIDENT expressed the hope that the author would be ble to isolate the substance and determine its constitution.

NOTES IN PARLIAMENT.

THE SMALL-POX EPIDEMIC.—It appears that there is a continued increase of small-pox on the Essex coast near Purfleet. Colonel Tufnell, in a question which he addressed on Monday, in the Commons, to the President of the Local Government Board, implied that this outbreak is connected with the presence of small-pox hospital ships in the locality named. Mr. Long, in his reply, declared that the managers of the Metropolitan Asylums District are doing everything in their power to provide the hospital accommodation necessary for the reception of small-pox cases from the Metropolis; but looking to the large number of these cases, he does not in the present circumstances propose to interfere with the discretion of the managers as to the use of the ships to which the question of Colonel Tufnell referred, and which have been moored in the Thames since 1885. Questioned later on by Mr. Bartley as to whether there will be any special legislation in view of the epidemic, Mr. Long replied laconically, "No legislation sary."

DUBLIN COLLEGE OF SCIENCE.—Several years ago money was ear-marked by the Treasury for the erection of a suitable College of Science in Dublin, but the new building not yet having been commenced, a question was put on the subject last Monday in the Commons. Mr. A. Chamberlain replied that the amount voted in 1899-90 was £13,000, and this was applied towards the purchase of part of the site for the new college. He will introduce a Bill very shortly for the acquisition of the rest of the site, and to provide funds for the new building and other purposes. He has satisfied himself from personal inspection that the existing building is quite inadequate for the work which the College is called on to perform.

FOOD PRESERVATIVES.—From a reply made by the President of the Local Government Board to Mr. Channing, it appears that the right hon. gentleman has not yet arrived at any decision upon the report of the Committee on Preservatives and Colouring Matter in Articles of Food. He is, however, giving the report "careful attention."

THE BUDGET—SUGAR.—The Chancellor of the Exchequer is not yet in a position to fix a date for the introduction of the Budget, but he has already made it apparent that sugar is to have no relief. Answering Mr. Farrell on Tuesday he stated that the amount raised in Ireland alone from the tax imposed on sugar last Session had up to the end of December last been £232,000. He added that in proposing the tax he anticipated that it would be a continuous source of revenue, and he could see no reason at present to alter that decision.

EARLY CLOSING.—Mr. Balfour was on Tuesday invited by Sir C. Dilke to say whether the Government would consider legislation to carry out the proposals of the Prime Minister, unanimously adopted by the Lords Committee on the Early Closing of Shops, in a report published since the last Session of Parliament, to the effect that towns should be authorised to pass provisional orders regulating the closing of shops on account of the existence of hours of work grievously injurious to health, and that such orders when approved by Parliament should acquire the force of law. Mr. Balfour replied that the subject was under consideration, but having regard to the business already before the House in the course of the present Session he could not hold out any hopes of anything being done.

PRIVATE MEMBERS' BILLS.—The opening of the new Session has been signalised as usual by the introduction and first reading of a large number of Bills of private members. They include a Bill to extend the provisions of the Medical Acts, 1857 and 1886, brought in by General Laurie; a Bill to secure the better training of midwives, and to regulate their practice, brought in by Lord Cecil Manners, and a Bill for the registration of midwives, brought in by Mr. Tatton Egerton. Mr. Tomlinson stands sponsor for a Bill to amend the law relating to the manufacture and sale of beer; and Sir Howard Vincent for a Bill to restrain the false marking of foreign goods as British made. Mr. Banbury seeks to legislate with a view to providing for the issue by companies of share and stock certificates, and Sir Charles Dilke again brings forward his "hardy annual"—the Bill to amend the law relating to shops.

The Patent Acts.—Replying to Sir John Leng, in the House of Commons, on Tuesday, Mr. G. Balfour, the President of the Board of Trade, said that he purposes at an early date to introduce a Bill to give effect to the recommendations of the Departmental Committee, presided over by Sir Edward Fry, on the working of the Patent Acts.

LETTERS TO THE EDITOR.

A Warning to the Benevolent.

On more than one occasion recently correspondents have called my attention to a person who purports to be Mary Masters—a widow of a member of the Society, and who appears to be working the chemists of the eastern counties for compassionate trifles till she can get assistance from the Benevolent Fund! I am sorry to say she is practising a particularly cruel form of imposture, inasmuch as she is using the name of a poor woman whose case *is* deserving and who is now being assisted by the Society. She was last heard of at Woodbridge, where she successfully extracted alms from the wife of a pharmacist. Needless to say, she cannot be induced to communicate with or to visit me. I shall be obliged if you will give publicity to the fact that the lady mendicant is on her travels with her stock of false pretences, and may be expected to favour prominent pharmacists with begging visits in due order. If registered persons would only refrain from relieving stranger applicants for help and simply refer them to me, the game now being played by the pseudo Mrs. Masters would cease to be profitable.

17, Bloomsbury Square, W.C. Richard Bremridge.
January 17, 1902. Secretary: Pharmaceutical Society.

Meeting of the Society in Edinburgh.

It has been found necessary to postpone this meeting, which was intended to have been held in January. The meeting is principally intended for the consideration of a proposal to provide a suitable course of study for pharmaceutical students in connection with the four Scottish Universities. It is now being arranged to hold the meeting on Friday, February 21, 1902. Mr. J. F. Tocher, F.I.C., Peterhead, will read a paper in explanation of the scheme, and a conference will follow. Details of the arrangements will be published later.

J. Rutherford Hill,
Edinburgh, January 20, 1902. Assistant Secretary.

A Reply from "Scrutator."

The statement quoted in your issue of January 11, from my letter to the *British Medical Journal* is not mine, but is the repetition of the invariable answer I have received from a member of the Pharmaceutical Society whom I have repeatedly charged with infringement of the law, but who relies upon his membership to remain unmolested. The Registrar is as well aware as I am of the manner in which the majority of the smaller businesses are conducted. If he chooses he can pursue a course against druggists similar to that being pursued against doctors, no complaint being lodged. The business to which I refer is conducted by the principal and an apprentice, the principal being frequently absent. Many others I know where the only assistant is unqualified, and where the principal is frequently absent. Apprentices and unqualified assistants thus left in charge during the principal's absence are usually left unrestricted as to what is to be sold or dispensed (except in the case of an unusual prescription), business going on as if the principal were present. I write from knowledge, not hearsay, for I have taken the trouble to inquire how these businesses are conducted. Messrs. P. Morison and Son have left the charge in my letter unanswered.

Glasgow, January 16, 1902. "Scrutator" (115/24).

⁂ If "Scrutator" is in possession of evidence to support the statement that infringements of the Pharmacy Act, 1868, take place in Glasgow pharmacies—whether belonging to members of the Pharmaceutical Society or not—his proper course is obviously to communicate the facts to the Registrar under the Act—Mr. Richard Bremridge, 17, Bloomsbury Square, London, W.C.—[Ed. *P. J.*]

London Chemists' Association.

I shall be glad to be allowed to call attention in the columns of the *P. J.* to the first meeting of the London Chemists' Association, which will be held at the Holborn Viaduct Hotel on Wednesday, January 29, at 3.30 p.m. A good number of the gentlemen who attended the meeting, convened by the Western Chemists' Association in November, omitted to sign the attendance sheet, and it will be impossible to send them personally a notice of this meeting. Any registered chemist residing, or engaged in business, in or near London will be eligible for membership of the Association, and on behalf of the Committee I wish cordially to invite the presence of all who are taking an interest in the formation of this new Association.

88, Norwood Road, S.E., Robert H. Jones.
January 21, 1902.

Opodeldoc and Glyco-Thymoline.

With an experience in at least four Scotch counties I have been in the habit of selling as opodeldoc the plain lin. saponis. The lin. opii I have been taught to sell as anodyne liniment. Seeing that laundresses here use lin. saponis along with turpentine to mix with the starch I am afraid the gnidman's collars would not be what he expects to see them. Steer's Opodeldoc I have sold in my time as a proprietary, but it was solid. References: Anodyne Liniment, Tinct. Saponis cum Opio, Edin., 'Edinburgh Dispensatory.' Opodeldoc, Camphorated Soap Liniment, 'Medical Dictionary,' Dorland. Another matter, Glyco-Thymoline, p. 30, *P.J.* These are some of the troubles that affect dispensers some hundreds of miles away from London. The possible language when one has several prescriptions handed in within a few minutes of each other for such an article as above mentioned can only be appreciated by the dispenser in a fix. But I am writing to Messrs. Thos. Christy and Co.

St. Andrews, January 20, 1902. Wm. R. Kermath.

Glacial Acetic Acid.

I no not think Mr. Alcock (see *ante*, p. 42) is justified in condemning this acid, merely on its immiscibility with an equal volume of turpentine, unless in both examinations he used the same sample of oil. Some months ago (*P.J.*, March 23, 1901, page 387) I found that commercial oils varied in solubility in glacial acetic acid, from 1 in 1—the B.P. requirements—to 1 in 5, the acid used being 99·2 per cent. I, therefore, think that his warning applies more to the oil than the acid. The B.P. does not require glacial acetic acid to be 99·6 per cent. as he states, but from 98·9 to 99·2 per cent. It defines it as a 99 per cent. acid. The melting point, 15·5° C., indicates 99·2 per cent., while the titration indicates 98·9 per cent.

Edinburgh, January 18, 1902. William Duncan.

Mucilage of Gum Acacia as an Excipient for Zinc Valerianate.

The following prescription has occasionally given rise to complaints, the pills sometimes becoming soft, although at other times they have remained hard and with a good surface:—

℞	Quininæ sulph.	gr. xii.
	Zinci valerian.	gr. xii.
	Ext. cannab. ind.	gr. ii.
	Ext. nucis vom.	gr. ii.
	Mucil. acac.	*q.s.*

M. in pil. xii.

The fault may be traced to the excipient, the acid of the mucilage interacting with the zinc valerianate. By using freshly-prepared mucilage, or an equivalent of powdered gum, the pills have proved perfectly satisfactory.

Cambridge, January 21, 1902. Percy Pain, Ph.Ch.

Veterinary Works for Chemists.

Whilst reading the Veterinary Notes by "Centaur," which, by the way, I think are excellent, the thought struck me that in a country business the chemist might make veterinary surgery a profitable side-line. What books could you recommend as giving some outline of the anatomy of domestic animals, and the methods of treating the wounds and diseases of these animals? Thanking you in anticipation,

Birmingham, January 21, 1902. "A. T. H." (69/17).

, A list of recent works on veterinary medicine, suitable for chemists' requirements, will be found in the *P.J.* for July 20 last, at page 73.—[Ed., *P.J.*]

Curious Hypertrophy of the Orange.

If Mr. Pinchbeck will refer to *Pharmaceutical Journal* [3], **17**, 620, he will find a description of a similar abnormality described by me. Since reading that note, I have had several similar examples brought to my notice, and apparently it is fairly common.

Edinburgh, January 20, 1902. J. Rutherford Hill.

, Several other letters have been received from readers who have met with similar fruits to that described by Mr. Pinchbeck, and a note on the subject will be found at page 73.—[*Ed. P.J.*]

Distillation of Water.

In reply to the enquiry made by Mr. F. Dickins on the subject of distillation of water, I have had in use for some years a still made for me, which, being used over a gas burner, and the water supply being controlled automatically, will run all day without attention. The yield is six or seven pints per hour. It may also be used for aromatic waters. If Mr. Dickins will write to the maker, Mr. J. Walker, Poole Hill, Bournemouth, he will, I think, meet with a most useful piece of apparatus.

Bournemouth, January 22, 1902. Stewart Hardwick.

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply.

Hydrarg. Oleas (E. F. B.—69/20).—Oleatum Hydrargyri, B.P. 1885, appears to be what is meant.

Book for Apprentice (C. R.—69/21).—You will find 'Pharmacopedia' the more useful of the two works for the purpose you mention.

Books (B. J. K.—69/14).—Your inquiry has been handed to Messrs. H. R. Hill and Sons, 61, New Oxford Street, London, W.C., who have promised to write to you on the subject.

Ext. Salicis Nig. Liq. (A. T. H.—69/18).—The gelatinisation, if accompanied by loss of astringency, is probably due, as in the case of tincture of kino, to the conversion of tannic acid into a body which is insoluble in alcohol.

Address (E. T. W.—69/8).—We are informed that the business of Messrs. Philipson and Co., has been purchased by Messrs. D. and W. Gibbs, Limited, City Soap Works, London, who can supply the same goods.

Safe Cure (J. R. V.—69/16).—We are unable to furnish you with a formula for the preparation. According to the report of an analysis of the preparation made by Mr. A. W. Stokes, he extracted from the contents of a sixteen-ounce bottle potassium nitrate, 315 gr.; glycerin, 1·25 oz.; burnt sugar or treacle, 0·5 oz.; rectified spirit, 2 oz.; a few drops of oil of winter-green and some vegetable extract resembling extract of liverwort.

Ether Soap (H. M.—69/19).—Mix oleic acid, 36 C.c., with alcohol (90 per cent.), 16 C.c., in a flask, and add potassium hydroxide solution (1 in 1), 7 C.c., or *q.s.* to produce a neutral solution, adding the alkali drop by drop and using phenolphthalein as an indicator. Next add 0·1 C.c. more of the alkali, so that the soap solution is rendered slightly alkaline, then set aside to cool, and, finally, add methylated ether (s.g. 0·720), *q.s.* to produce 100 C.c.

Seaweed Ointment (H. G.—69/15).—The *Fucus vesiculosus* which you speak of as being preserved in solution of washing soda is quite unsuitable for use. Situated, as you are, on the coast, it will only mean a visit to the beach to obtain plenty of the raw material in the fresh condition, in which state only should you use it. As to the preparation of the ointment, you might experiment in two directions. In the first, take equal parts of fresh seaweed and lard, boil together until the weed becomes crisp and all water is evaporated, then strain through flannel. A second form of ointment might be made by first drying the weed on the water-bath, then cutting up small powdering, and exhausting by maceration and percolation in 70 per cent. alcohol, distilling off the solvent, and incorporating the soft extract with the ointment basis. Possibly a combination of the two methods might give you what you require. Combined with an emollient basis some such "seaweed ointment" would probably make a good proprietary article for local sale.

Pharmaceutical Journal

SATURDAY, JANUARY 25, 1902.

A Copy of this Inset is inserted in every Copy of the *Pharmaceutical Journal* issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. The Inset can also be obtained by personal application, on the day of publication.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

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SALE AND EXCHANGE . Page 14

Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words or less, 6d.; two initials or two figures counting as one word.

QUALIFIED ASSISTANT (indoors), required Feb. 1st.—OGLE, Broadway Pharmacy, Tunbridge Wells.

ASSISTANT (indoors) wanted immediately; good class business.—Apply, with full particulars, to EKINS & FISHER, St. Albans.

JUNIOR ASSISTANT or IMPROVER wanted; outdoors.—Apply, CHAS. THOMPSON, Pharmaceutical Chemist, Sparkbrook and Sparkhill, Birmingham.

WANTED, DISPENSER (qualified) for high-class Branch Store.—State age, height, salary required (outdoor), references and enclose photo, to WAND, Cash Chemist, Haymarket, Leicester.

SOUTH AFRICA.—Qualified ASSISTANTS willing to accept situations in the Cape Colony, the Transvaal, Orange Free State, or Natal, should apply to LENNON LIMITED, 75, Leadenhall St., London, E.C.

QUALIFIED ASSISTANT for London suburb (S.W.); of good address. Must be well up in Dispensing and High-class Retail.—CHEMICUS, Messrs. Barron Harveys, Giltspur St., E.C.

JUNIOR, of good address, about 20; outdoors; with knowledge of photographic trade preferred.—Full particulars as to salary, experience, &c., and enclose photo, E. BING & SON, Pharmaceutical Chemists, Canterbury.

A JUNIOR or IMPROVER for Retail and Dispensing business; outdoors. Please state salary and usual particulars, with photo; also vacancy for an APPRENTICE.—Apply, C. PAINE, Pharmaceutical Chemist, Newport, Mon.

MESSRS. TIMOTHY WHITE Company, Chemists, Portsmouth, have vacancies in various parts of the South of England and Isle of Wight, for trustworthy young qualified ASSISTANTS; early prospect of management.

Assistants Wanted—Continued

WALES.—Wanted immediately, an energetic young man as MANAGER in a Family and Dispensing Chemist's; Welshman preferred.—Apply, stating age, experience, reference and salary, DRACHMA, Pharm. Journal Office, 8, Serle St., W.C.

WANTED, for Calcutta, an ASSISTANT, well up in practical work, with Minor qualification; aged not over 24 years; 4 years' agreement; passage paid out and home; good salary to a competent man.—Apply, by letter, to H. A., Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

APPLICATIONS are invited for an IMPORTANT POST (progressive), in the office of a London Drug House. Experience of Wholesale essential. Liberal salary to suitable man. Replies treated in strictest confidence.—Send all particulars, including age, detailed experience and present salary, to SENIOR, c/o Pharm. Journal Office, 8, Serle St., W.C.

INDIA.—Qualified (Minor) MAN wanted for Calcutta; age under 30; must be single, and have had experience in good houses; four years' agreement. Salary, first year, Rs.200 monthly; second, Rs.225; third, Rs.250; and fourth, Rs.300; passage paid both ways.—Apply, stating full particulars of qualifications, to GENTIAN, Pharm. Journ. Office, 8, Serle St., W.C

CAPE COLONY.—Wanted, good ASSISTANT, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £140; second year, £150; third year, £160; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, CAPE, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified ASSISTANT; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to STRAITS SETTLEMENTS, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

MINOR; 22; desires engagement.—Phenol, 8, Serle St. W.C.

MANAGER; qualified; 32; married; highest references.—Salol, 39, Eastgate St., Gloucester.

QUALIFIED; good experience; 5 ft. 7 in.; outdoors preferred.—M.P.S., 14, Branch Rd., Batley.

QUALIFIED; 10 years' first-class experience; 25.—Davies, Albion House, New Quay, Cardiganshire.

ASSISTANT; qualified; 22; good references. — Lunt, 444, Chester Rd., Old Trafford, Manchester.

QUALIFIED; 26; Dispenser or Manager; London experience.—Chemist, 9, Tulse Hill, Brixton.

MANAGER; qualified; age 52; near London. — Alpha, 6, Victoria St., Cwmbran, Monmouthshire.

QUALIFIED; 23; requires day-time employment; wholesale or retail.—Dobson, Abbey Parade, S.E.

JUNIOR; 21; excellent references; good experience; London preferred.—Dutton, Cowley Hill, St. Helens.

PRIVATE Coach to Apothecaries' Hall or Minor Students; terms moderate.—J. B., 253, Burdett Rd., E.

DOCTOR'S Dispenser and Book-keeper; experienced; qualified; single. — Chemist, 77, Bristol St., Hulme, Manchester.

ASSISTANT; disengaged; outdoors; in or near North London; time for study.—Weston, 54, Hillmarton Rd., Holloway, N.

QUALIFIED; 25; nine years' good class Provincial and London experience.—W., Pharm. Journal Office, 8, Serle St., London, W.C.

MANAGER; 27; qualified; West-end and Suburban smart Store experience; disengaged Feb. 1. — Spooner, 21, Garfield Rd., Lavender Hill, S.W.,

QUALIFIED Lady Dispenser (Hall certificate) disengaged; London experience; resident or otherwise.—L., Pharm. Journal Office, 8, Serle St., W.C.

YOUNG Chemist, F.C.S.; modern languages; thorough business training and education in Pharmacy, Chemistry, &c., as Secretary, Manager, or Assistant Chemist. — 54, Percy Rd., Upton Park.

BRANCH MANAGER; qualified; London and Provincial experience; accustomed to good-class business; quick, reliable, and trustworthy; disengaged.—Chemicus, Mill St., Ottery St. Mary, Devon.

Engagements Wanted—Continued.

AS Dispenser, Stock-keeper, or Laboratory Assistant; Pharmaceutical Chemist; experienced, capable, middle aged; widower; could take charge of business premises.—M., 5a, Basing Rd., Peckham, S.E.

EMERGENCY.—Locum Tenens; qualified; middle-aged; abstainer; Extractor; long or short periods; disengaged; usual terms, reasonable; references.—Telegraph, Brewerton, 133, Liverpool Rd., Birkdale, Southport.

WANTED by a qualified Chemist, with first-class experience, permanent work till 5 or 6 p.m. daily, as Dispenser to Doctor or Institute, Manager, or any position of trust; abstainer; conscientious; reliable; age 31.—W., 5, West Hill Rd., Brighton.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Platinum Utensils and scraps for cash.—P. Rowsell, 9, Derwent Grove, Dulwich.

Herbarium and Materia Medica specimens, collection of, suitable Minor exam.—G. E. Ainslea, Scotstounhill.

Fernie's "Herbal Simples," second edition.—Particulars and price to A. R., Pharm. Journal Office, 8, Serle St., W.C.

Vacuum Pan Wanted, a small vacuum pan in working order.—State price and size, O'Brien, 1, Grantham St., Dublin.

OFFERED.

Slides, second-hand, 4½d. each; Hand-painted photos; lists free.—T. Wing, Chatteris.

Perfume Ribbons, quarter inch wide, 36 yards long, post free, 1s. 6d. Blue, Pink, Green, Mauve, Crimson, Salmon (6 rolls, 7s. 6d.).—Edward Peck, East Dereham.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

READING COVERS Cloth, Gilt-lettered Covers, with strings, to hold twenty-six numbers of the "**Pharmaceutical Journal,**" may now be obtained. The charge, including postage, is 2/- each, and should be remitted to

The PUBLISHERS, 8, SERLE STREET, LINCOLN'S INN, LONDON, W.C.

COVERS FOR BINDING Cloth, Gilt-lettered Covers for binding the half-yearly volumes of the "**Pharmaceutical Journal**" may now be obtained. The charge, including postage, is **1s. 2d.** each, and should be remitted to

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Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows :—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

FOR Disposal, first-class DISPENSING and light Retail (South). Price £950, sine a/cs.—For particulars apply, M. Q., Pharm. Journal Office, 8, Serle St., London, W.C.

SPLENDID old-established Drug BUSINESS, in a prosperous manufacturing town in the South of Scotland, for immediate disposal; exceptional position.—Apply PHARMOS, Pharm. Journal Office, 8, Serle St., W.C.

FOR Disposal, a good-class BUSINESS in busy main road of residential suburb, West, with large returns increasing; established 17 years; suitable for 2 friends. Full particulars on receipts of banker's and trade references.—EXALGINE, Pharm. Journal Office, 8, Serle St., W.C.

NEWLY-OPENED Branch BUSINESS; unopposed light retail and dispensing. Death sole cause of sale; suit beginner. Price £90 for stock, fixtures, and fittings (new). Lock-up shop. Accept reasonable offer.—Apply, W. RIGNALL, 203, Clarendon Rd., Notting Hill, W.

£45, including Stock, Fittings, &c.; doing between £4 and £5 weekly. Prescribing and little Dental (good opening for Dentistry); rent £40, £22 let off; three years' agreement, or would be let to monthly tenant. Shop, large cellar, coal cellar, and 2 rooms unlet. Must be sold.—Apply, CHEMIST, 10, Barandon St., Notting Hill.

LONDON, N.W.—Branch for Sale, in main thoroughfare; lock-up shop, with back parlour and 3 rooms in basement; handsomely fitted in mahogany, mirror-backed throughout; well stocked; takings £6 to £7 a week, under management; hardly any patents sold; profits far above the average; a good man, understanding Photography, could do treble; rent £70, let off £50; lease 18 years to run; vendor is willing to sell cheap, having no time to look after it.—MAYLE, 166, Aldersgate St., E.C.

Businesses Wanted

WANTED, a good-class Retail BUSINESS in small country town (Midlands preferred); must have good house attached. Capital £1,000.—Address, CORTEX, Messrs. Southall Bros. & Barclay, Birmingham.

Shop to Let

CHEMIST'S Splendid Opening.—Spacious Shop with plate-glass front; concrete cellar and vaults; main road, busy neighbourhood; all adjoining shops let to old tenants; large bank in same block; excellent opportunity as branch business; rent £100; direct from owner.—View, 2, Bank Building, West Kensington (close to station). Note.—Chemist's shop recently absorbed by bank for extension.

Apprenticeships

APPRENTICE.—Vacancy for a well-educated YOUTH as indoor Pupil; careful personal instruction and every home comfort; premium required.—H. J. BROUGH, Pharmaceutical Chemist, Netherwood Rd., West Kensington, London, W.

Shop Fittings for Sale

PLATE-GLASS Shelves, polished edges, 3 ft. long by 20 in., 16 in. and 12 in. standard bars and brackets, complete £3 10s. Chemist's Side Fittings, from £1 foot run. Counters from 7s. 6d. foot run. Counter Cases from 7s. foot run. Dispensing Screen, 6 ft. long, £6 10s. Cheapest house for blinds, mirrors, shelves, lamps, and window fittings.—**TREBLE & Co.**, Complete Shop Fitters, **RECTORY WORKS, RENDLESHAM ROAD, CLAPTON, LONDON, N.E.**

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56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., CHEMISTS' TRANSFER AGENTS, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

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PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

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Chemists' Transfer Agents and Valuers,

9, NEW CANNON STREET, MANCHESTER.

VENDORS saved time and trouble by consulting before offering for sale. PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address*, "TOMTOM."

Messrs. BERDOE & CO.

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Stock-taking is a necessity, and we undertake the work at the smallest possible cost, and guarantee not to upset the routine of business in the slightest degree. Terms on application. Businesses sold, valued and investigated. Note the address :—

35, JEWRY STREET, FENCHURCH ST., CITY.

THE YORK GLASS COMPANY, LTD, YORK, Manufacturers of Flint and Bottle Glass and Chemists' Requisites. Complete series of Patent Labelled Bottles, &c., as well as other specimens may be seen at our London Office and Showroom: **76, FINSBURY PAVEMENT, E.C.,** under the management of our Mr. James Wilson.

OPENING A PHARMACY.

IF you are about to start in business, do not fail to apply to H. Poths & Co., 4, 5 and 6, Bury Court, St. Mary Axe, London, E.C., for one of their price lists giving full particulars of sets of shop bottles and jars and lists of labels, thus saving an immense amount of labour and time.

CHEMISTS WHO WISH

to make Up-to-date Improvements, Alterations, &c., would do well to consult

H. MILLS, Shopfitter, Shop Front Builder, &c.

WORKS: 63-165, OLD STREET, LONDON, E.C.

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242,518. A Veterinary Medicine. Henry Cumberland, Exbury Lodge, Catford, Kent; Veterinary Medicine Manufacturer.—November 28, 1901. "The essential particular of the Trade Mark is the combination of devices, and I disclaim any right to the exclusive use of the added matter."

Weedicide.—242,727. A Powder, included in Class 2, for Killing Weeds. The Thames Chemical Company, 61, Chancery Lane, London, W.C.; Chemical Manufacturers. December 17, 1901. No claim is made to the exclusive use of the word "Weed."

Class 3.

Scott's Nervuline.—241,150. A Medicine for Human Use. Thomas Lamb Scott, Trimdon Colliery, Co. Durham, England; Chemist and Druggist.—October 9, 1901. No claim is made to the exclusive use of the word "Nerve."

Glycophos.—241,908. Medicine for Human Use. Oppenheimer, Son and Co., Limited, 179, Queen Victoria Street, London, E.C.; Manufacturing Chemists.—November 12, 1901. No claim is made to the exclusive use of the word "Glyco."

Class 8.

Jingo.—241,800. Photographic Cameras and other Photographic Goods included in Class 8. Seabrook Bros. and Co., 21, Edmund Place, London, E.C.; Merchant.—November 6, 1901.

Rutico.—242,391. Cameras and like Photographic Appliances, included in Class 8. Rushbrook and Company, 30, Moor Street, Birmingham; Manufacturers.—November 30, 1901.

Class 48.

Device.—241,672, showing spray of blossoms, with the words Pyrola Extrait triple, Buisson Frères, London. A Perfume. W. J. Bush and Co., Limited., Registered Offices, 28, Ash Grove, Hackney, Middlesex; Manufacturing Chemists and Essential Oil Distillers.—October 31, 1901. "The essential particular of the Trade Mark is the combination of devices, and we disclaim any 'right to the exclusive use of the added matter.'"

Lo Bafo.—241,773. A Toilet Preparation for Softening Water. Violet Vaughan (wife of James Vaughan), 10, Blenheim Street, New Bond Street, W. (late of 72, New Bond Street), London; Toilet Specialist.—November 5, 1901.

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Standard Ammonia Company of Sydney, Limited.—This company was registered on January 14, with a capital of £10,000 in £1 shares, to carry on the business of chemical manufacturers, chemical refiners, manufacturing chemists, etc., and dealers, both wholesale and retail. No initial public issue. There are to be four directors. Qualification (other than a managing director), £300. Remuneration (other than a managing director), £100 per annum, divisible.

Lawrence Heap and Company, Limited.—This company was registered on January 8 with a capital of £5,000 in £1 shares, to acquire certain businesses, and to carry on the business of manufacturing chemists, pipe-clay manufacturers, druggists, drysalters, oil and colour men, importers and manufacturers of chemical and other preparations, manufacturers of photographic, surgical, and scientific apparatus and materials, etc. No initial public issue. The first directors (to number not less than two nor more than five), are L. Heap (chairman), and L. Greenwood. Qualification, £50.

Hydrosol, Limited.—This company was registered on January 16, with a capital of £15,000, in £1 shares (10,000 preference), for the purpose of acquiring, as a going concern, the business of processers of petroleum, merchants, and warehousemen as now carried on at Hydrosol Wharf, Leveu Road, Poplar, E., as Hoffman and Shoemaker, and to carry on the business of oil refiners, storers, and dealers, chemists, druggists, drysalters, oil and colour men, and dealers in apparatus used in connection with the above. Minimum subscription, 10 per cent. of the shares offered to the public. The first directors (to be not less than two nor more than seven) are M. A. Hoffman and W. M. Shoemaker, Jun. Qualification, other than the first directors, £200. Remuneration, £1 1s. each for each board attendance, to be increased according to profits. Registered office: Dunster House, Mincing Lane, E.C.

Thierry (Adolf), Limited.—This company was registered on January 16, with a capital of £60,000, in £1 shares (40,000 preference), to acquire the business of manufacturers of and dealers in patent medicines, ointments, and other medicinal preparations as now carried on by A. Thierry at Pregrada, in Austria-Hungary, and at 48, Brixton Road, London, together with the goodwill and trade name of the said business; to adopt an agreement made December 19, 1901, between A. Thierry, of the one part, and L. H. Hardman, for this company, of the other part, and generally to carry on in all or any of their respective branches the businesses of manufacturing and wholesale and retail chemists and druggists, manufacturers of and dealers in pharmaceutical, medicinal, chemical, industrial, and other drugs, preparations, and compounds, makers of and dealers in patent medicines and proprietary articles of all kinds, and of electrical, chemical, surgical, and scientific apparatus and materials. Minimum cash subscription, £5,000. The first directors (to be not less than three nor more than seven) are H. W. Davis, W. B. Helsby, J. Leighton, and H. Steiner. Qualification, £200. Remuneration, 300 guineas per annum—other than the vendor's (A. Thierry) nominee (Hugo Steiner)—together with a percentage of the net profits, the same to be divisible. Registered office: Aldermary House, 60, Watling Street, London, E.C.

SOCIETY AND ASSOCIATION NEWS.

Western Chemists' Association (of London).—On Wednesday, January 22, a most successful smoking concert was held at the Westbourne Restaurant, Craven Road, Paddington, under the auspices of this Association. The chair was taken by the President, Mr. W. F. Gulliver, and an excellent musical entertainment was given under the direction of Mr. Henry Prenton, assisted by Mr. Charles Gardener, Mr. H. H. Heap, R.A.M., Mr. Alf Wood (banjoist to H.R.H. Princess Louise), and Mr. Ambrose Skinner (comedian).

Chemists and Druggists' Society of Ireland.—The annual musical evening in connection with this Society will be held on Friday evening, January 24, in the Whitehall Buildings (large hall), Ann Street, Belfast, Mr. James Tate in the chair. The committee in charge of the arrangements—Messrs. W. J. Gibson, John Frackelton, R. A. Jamison, and W. J. Rankin—have provided a good programme, consisting of twenty-four items, so that an enjoyable evening may be anticipated.

School of Pharmacy Students' Association.—The first meeting of the new term in connection with the above Association was held on Friday evening, January 17, Mr. H. S. Philips occupying the chair. It took the form of "Impromptu Discussions," and was much enjoyed by everyone present. All the members were quite on their mettle, and some capital impromptu speeches were made. The topics chosen proved very attractive, and not only included matters concerning pharmacy but ranged so far as to include "Trade Unionism," and the latter had its supporters, even at the "Square." Time, unfortunately, did not permit of every subject submitted being discussed, and an interesting meeting was brought to a close by a hearty vote of thanks to the popular Chairman.

Chemists' Managers' and Assistants' Society of Great Britain.—A meeting of this Society was held at the "Horseshoe" Hotel, Tottenham Court Road, London, on Wednesday, January 22, when the President, Mr. C. E. Pickering, read a paper, entitled, "What should be the salary of a chemist's manager or assistant?" in which he stated that in his opinion the minimum salary of a junior assistant should be £30 per annum indoors, or £75 outdoors. On passing the Minor the salary as an assistant should be £60 indoors, or £120 outdoors;

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and on taking over the management of a good family and dispensing business £80 indoors and £140 to £160 outdoors, with a commission on results.

Newcastle and District Chemists' Association.—At a meeting of this Association, held at North Shields, on Wednesday, January 22, Mr. Barry Noble read a paper on the "Apprenticeship Question." The conclusion arrived at was: (1) Abolition of the premium system, and apprentices to be given a fair wage for their work; (2) apprentices to be taught the art of pharmacy, and not brought up as mere salesmen; (3) chemists must all join the Pharmaceutical Society, and let the Council understand what it has to do by using their voting papers to that effect; (4) the Minor Examination must be divided.

Paisley Chemists' Annual Dance.—The third annual dance of the Paisley chemists' assistants was held in the Art Gallery of the Town Hall on Tuesday, January 21. Dancing began at eight o'clock, and continued till ten, when the company sat down to supper, at which Mr. Alexander Fraser, chemist, presided. After supper the Chairman complimented the Committee on the success of their undertaking, and advocated the formation of a local Chemists' Assistants' Association for the purpose of advancing trade interests and social intercourse. He concluded by proposing a vote of thanks to the Committee, which was acknowledged by the Secretary. Mr. J. B. Surgenor having proposed a vote of thanks to the Chairman, dancing was resumed, and continued till three a.m., when a very pleasant and most enjoyable gathering was brought to a close. The arrangements were in the hands of a committee composed of Messrs. W. Reid, J. M'Houl, R. M'Donald, A. H. Paton, A. S. Taylor, and G. Hair (Secretary), and the latter two gentlemen also acted as M.C.'s.

SCHOOL AND COLLEGE NEWS.

Football.—The Square XI. played their fourth league match against Muter's at Shepherd's Bush on Saturday last. The game was rather one-sided, the Square winning by 7 to 0. Hills scored 4, Hewlett 2, and Paterson 1. Team: Cleghorn, Collett, Martin, Williams, Moore, Hirst, Hines, Hills, Mitchell, Hewlett, and Paterson.

Westminster College of Chemistry and Pharmacy.—At the prize competition held on December 10 the following gentlemen were awarded the medals of the college: Chemistry, Mr. L. S. Willox; Botany, Mr. B. Bickley; Materia Medica, Mr. A. J. McCabe; Pharmacy, Mr. G. T. Walker; Dispensing, Mr. H. H. Cannon. Four out of the five were successful in passing the Minor Examination this month.

The "Square" Football Club.—The annual fixture, Past *v.* Present, in connection with this club, more familiarly known as the "Old Boys'" Match, will take place this year on March 22. It has been proposed that the "Old Boys" should adopt colours entirely distinct from those of the "Present" team, and that a sufficient number of shirts should be purchased, which should remain the property of the "Old Boys," and be available for use from year to year. The Secretary (W. B. Nelson, 4, Maclise Road, West Kensington) will be pleased to hear from any old Square men willing to help in the matter, either by advice or financially.

PERSONALITIES, BUSINESS CHANGES, ETC.

Notices of business changes, etc., should be sent by Divisional Secretaries or the persons interested, and will then be inserted free.

Mr. Henry B. Dunn, chemist and druggist, of Hull, has purchased the business of Mr. G. P. Wilson, chemist, Regent Street, Leamington.

Mr. Arthur Bellamy, chemist and druggist, Louth, was installed Worshipful Master of the Lindsay Lodge of Freemasons on January 17.

Mr. George Burnett, chemist and druggist, of Liverpool, has taken over the business lately carried on by Mr. James Herbert Suttle, chemist, Ludlow.

P.A.T.A. and C.D.A.—The offices of the two associations of which Mr. Glyn-Jones is Secretary have been removed to 184, Temple Chambers, Temple Avenue, E.C.

Messrs. J. Clempson and F. A. Burgess have taken over the businesses of the late Mr. Gristock, 42, South Street, Manchester Square, and 97, High Street, Marylebone, and will be carried on by them as Gristock and Co.

Messrs. Joseph Severs and Thomas Bateson, pharmaceutical chemists, Kendal, have dissolved partnership, Mr. Severs retiring from the business, which will in future be conducted by Mr. Bateson under the old style of Severs and Bateson.

Messrs. James McNiven and Andrew Forrester, chemists, of Graham's Road, Falkirk, and Camelon respectively, announce that they, having joined their businesses forming a co-partnership, will carry on in future as "McNiven and Forrester."

TRADE NOTES AND NOVELTIES.

Photographic Plates.—Messrs. Cadett and Neall, of Ashtead, Surrey, offer a special discount during Coronation year on certain sizes of their Royal Photographic Plates. Particulars are given in our advertisement pages.

Capsules and Coated Pills.—The Wand Manufacturing Company, Leicester, submits specimens of improved flexible capsules for examination, also specimens of varnished, silvered, and oval gelatin-coated pills. All are of excellent quality, well finished, attractive in appearance, and likely to bring credit to any retailers who may handle them. Readers of the *P.J.* should write for specimens and prices.

Limpet Vaccination Pad.—Messrs. Solport Brothers, 188, Goswell Road, London, E.C., are introducing a new vaccination pad, made of absorbent lint and cotton wool, and mounted on self-adhesive indiarubber plaster, the ample margin of that material which is provided sufficing to keep the pad firmly in position, without any unpleasant constriction of the arm, such as is caused by the use of tapes, etc. The "Limpet" pads are made in two sizes—children's, to retail at 2d., and adults', to retail at 3d.

Horlick's Malted Milk.—Messrs. Horlick and Co., 34, Farringdon Road, London, E.C., send samples of their malted milk in powder and tablet form. This is a concentrated food, which, it is claimed, represents all the nutritive elements in milk, and the cereals, in the most condensed and convenient form. The powdered form is very suitable for making a refreshing drink, while the lunch tablets, which are eaten dry, are especially suitable for travellers, cyclists, sportsmen, and others. The tablets and the powder are put up in screw-capped bottles, and are sold at 1s. 6d., 2s. 6d., and 11s. each, according to size.

New Price List.—Messrs. Southall Bros. and Barclay, Limited, are just issuing a new price list which includes particulars regarding drugs, chemist's counter specialties, perfumes, sundries, shop fittings, surgical dressings, etc., besides illustrating the number and variety of the firm's departments, and showing that it is in a good position to supply all articles for the chemist's use. The chemical, photographic, and scientific apparatus list is issued separately, and there is a special department for those goods, which, by the way, the firm supplies to the Birmingham University and to the Birmingham Technical School. Messrs. Southall Bros. and Barclay, it may be pointed out, are now manufacturers from the raw materials of cotton wool, lint, bandages, antiseptic and aseptic surgical dressings. They have just built and equipped a large factory outside Birmingham for the manufacture of cotton wool and bandages, and have also recently purchased the business of W. G. Taylor, Charford Mills, Bromsgrove, who was the manufacturer of the well-known Taylor's flax lints. Those mills are situated close to the residence of Mr. T. Barclay, who is constantly in attendance, and is in telephonic communication with the mills, so that this department is under his personal supervision. The new price-list includes particulars of a new collection of materia medica specimens illustrating the materia medica of the Indian and Colonial Addendum to the British Pharmacopœia, 1898.

MARKET REPORT.

LONDON, THURSDAY, JANUARY 23, 1902.

We have, to our regret, to again record a dull week as regards business in Drugs and Chemicals. Almost everything appears to be still on the down grade, although there are few actual changes of any special importance to record. As was fully anticipated, Cocaine has receded in price. Quinine is quiet, and nominally unchanged, pending result of to-day's auctions of Cinchona Bark in Amsterdam, the result of which had not become known at time of going to press.

ACID CARBOLIC.—Prices have now reached a level at which it would appear safe to secure supplies, on basis of 6½d. to 7d. per lb., according to quantity and make, for the 34-35° ice crystal in large bulk packing.

ACID CITRIC—Continues quiet at 1s. 1d. per lb. for crystals in 5-cwt. casks.

BISMUTH SALTS—Are steady at unchanged prices.

BROMIDES—Are very firm, and in good demand at unchanged prices.

CAFFEINE.—Makers still quote 12s. to 12s. 6d. per lb., according to quantity, for pure alkaloid.

CODEINE—Is firm and in good demand at unchanged prices.

COCAINE.—As had been fully anticipated as a result of larger supplies of crude, makers reduced their price for the refined article 3s. per oz., and now quote the Hydrochlorate 17s. 9d. to 18s. 3d. per oz., according to quantity, in 25-oz. tins.

COPPER SULPHATE—Is quoted £18 15s. per ton on the spot.

CREAM OF TARTAR—Is quiet at unchanged price.

GAMBIER—Continue dull at the recent decline, with rather sellers January-March shipment at 20s. 3d., c.f. and i., delivered weight, but no business is reported.

GLYCERIN.—While the price of crude has considerably advanced, the combined makers so far made no change in their price for the refined article.

IODIDES.—The combined makers so far made no alteration in their prices. Underselling, however, continues on part of makers outside the convention.

MENTHOL—Is stated to be very firm at 14s. 6d. per lb. for Kobayashi brand in 5-lb. tins, and for case lots; buyers will do well to bear in mind that price is high as compared with value not so very long ago.

MORPHINE—Is quiet and unchanged.

PHENACETIN—Is weak at nominally unchanged price, viz., 4s. 3d. to 4s. 9d. per lb., according to quantity, for both powder and crystals.

QUICKSILVER—Is unchanged at late reduction to £8 15s. per bottle from the importer.

QUININE.—The speculative market for best German brands is weaker, but a larger business has been done at the decline, comprising about 50,000 oz. B&S and/or Brunswick, on the spot at 1s. 1d., May delivery at 1s. 1⅜d. to 1s. 1½d., and June at 1s. 1½d. to 1s. 0⅝d. The result of to-day's Bark sales in Amsterdam is now awaited. It is reported that same opened firm at a very moderate decline on previous prices, which is so far satisfactory in view of the very considerable quantity of Bark which is being offered.

SHELLAC.—The Calcutta price of TN Orange is cabled lower at 65 rupees. The market here continues extremely quiet, with a declining tendency in prices, and few sales of any importance have occurred. Futures remain inactive. Call prices, sellers:—February, TN, 122s.; March, 122s.; April, 123s.; May, 123s. 6d.; June 124s. The only sale reported is for 100 cases May delivery at 122s.

SULPHATE OF AMMONIA—Quiet. Grey 24 per cent. London prompt £11 6s. 3d. to £11 7s. 6d. Hull prompt £11 5s. Leith prompt £11 6s. 3d. Beckton Jan.-June £11 10s. Beckton terms prompt £11 5s.

SULPHONAL.—Bayer's make is still obtainable at 5s. per lb. for both crystals and powder for quantity and in bulk packing.

THURSDAY'S DRUG SALES.

To-day's Drug Sales comprised 15 catalogues, which were, however, all only short ones. Many of the lots, however, failed to sell. We give particulars below of actual business done:—

ALOES.—43 cases Cape sold at 35s. per cwt. for good, hard bright, downwards, according to quality. Other 19 cases sold at about same parity. 27 cases East African were taken out at 30s. per cwt.

ASAFETIDA.—Of 122 packages only 4 sold at 62s. 6d. per cwt. Other 440 packages, part sold at 75s. per cwt. for good almondy block, downwards.

CALUMBA ROOT.—11 bags stemmy sorts sold at 9s. per cwt.

CAPSICUMS.—1 bag Nyassaland realised 20s. per cwt.

CARDAMOMS.—38 cases Ceylon Mysores chiefly failed to sell, one or two lots of the smaller sizes selling at 1s. 2d. to 1s. 4d. per lb. Other 34 cases were also nearly all bought in. Other 5 cases sold at 1s. 10d. to 2s. 6d. per lb., the latter price being paid for 1 case bold pale. Other 76 cases Mysores sold at 3s. 4d. per lb. for good bold pale and 3s. for splits downwards, according to size, quality, and condition, pale seed selling at 1s. 10d. per lb. 6 cases wild native Ceylon sold at 2s. 10d. per lb. downwards.

CASCARILLA BARK.—54 bales of good quality had to be brought in, 9 barrels siftings selling at 35s. to 36s. per cwt.

CINCHONA BARK.—15 bales dull Calisaya sold at 6¾d. to 7d. per lb.

COCA LEAVES.—4 cases Ceylon sold at 1s. per lb., and 1 case of not so good quality, at 10d.

COLOCYNTH.—4 cases fair pale, but rather broken Turkey were taken out, nominally at 1s. 8d. per lb.

DRAGON'S BLOOD.—13 cases good dry thin seed were taken out at £10 10s. per cwt.

ESSENTIAL OILS.—1 case Ylang Ylang was bought in at 4s. 6d. per lb.

ERGOT OF RYE.—6 bags of rather mixed quality were bought in at 1s. 8d. per lb.

GAMBOGE.—16 cases all sold at £11 to £13 10s. per cwt. for fair to good bright, and at £8 to £10 7s. 6d. for pickings.

GUAZA (CANNABIS INDICA).—Of 34 robbins 5 robbins good tops, sold at 2s. 3d. per lb.

GUM BENZOIN.—117 cases Sumatra were nearly all bought in on basis of £8 per cwt. for good seconds, a few lots selling at £7 to £7 2s. 6d. for medium quality. Of 53 cases Palembang only 5 cases sold at 35s. per cwt. 55 cases Penang all sold at 40s. per cwt.

GUM ELEMI.—4 cases good pale gum had to be bought in.

GUM GUAIACUM.—Of 14 barrels only 1 barrel sold, subject to owner's confirmation, at 1s. 1d. per lb. for good glassy block; 1 package drossy only realised 10d. per lb.

GUM KINO.—14 cases good bright dark were taken out at 1s. 3d. per lb.

GUM MYRRH.—10 bales of medium sorts sold at 70s. per cwt. Other 33 bags part sold at same figure.

HONEY.—Of 72 packages Jamaica only a few kegs sold at 17s. to 17s. 6d. per cwt.

IPECACUANHA.—11 bales Rio were bought in at 10s. 6d. per lb. Of other 26 bales ditto a few bales sold at 10s. 3d. to 10s. 4d. per lb. 7 bags dull Carthagena were taken out nominally at 6s. per lb. Of other 7 bags of fair quality only 2 bags sold at 4s 8d. and 4s. 11d. per lb. respectively.

JALAP.—17 bales fair small heavy tubers were bought in at 6d. per lb.

MENTHOL.—5 cases Kobayashi brand were taken out at 14s. 9d. per lb.

NUX VOMICA.—95 bags sold at 10s. 6d. per cwt. for good bold Cochin, and at 7s. 6d. to 8s. 3d. per cwt. for poor to good pickings.

ORANGE PEEL.—Of 33 bags only 8 bags sold at 10d. per lb.

RHUBARB.—6 cases fine medium to small high dried failed to find a purchaser. Of other 18 cases 2 cases fine bold round orange-coated Shensi, showing fine fracture, sold at 3s. per lb.; 4 cases ditto, second size, at 2s. 10d.; good flat sold at same figure, and 2 cases rough spongy pickings, round and flat mixed, at 1s. 8d. per lb.

SENNA.—98 bales Tinnivelly practically all sold at 2¼d. per lb. downwards, according to size, colour, and condition, pods realising 1½d. to 2½d. per lb. Other 15 bales only realised 1¾d. per lb. downwards.

TAMARINDS.—Of 56 barrels West Indian, 10 barrels sold at 12s. per cwt., and other 10 barrels at 10s 6d., subject to owners' confirmation.

TONQUIN BEANS.—5 cases good frosted Paras sold at 1s. 8d. to 1s. 9d. per lb.

WAX.—10 packages Jamaica part sold at £8 per cwt. 51 bales Zanzibar were chiefly bought in, the damages selling at £6. 3 cases Bombay realised £6 2s. 6d. per cwt. 24 blocks Zanzibar sold at £6 per cwt., subject to owners' approval.

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A Good Sound Cup of

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DIARY OF THE WEEK.

Tuesday, January 28.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION.—Musical Evening.

GLASGOW CHEMISTS' AND DRUGGISTS' ASSISTANTS' ASSOCIATION, at 9.15 p.m.—"The Reign of Law: Being a Plain Statement of Some Present-day Facts Commonly Ignored," by T. Maben.

ROYAL INSTITUTION, Albemarle Street, Piccadilly, W., at 3 p.m.—"The Cell; Its Means of Offence and Defence. Immunity." (Lecture III.) By Dr. Allan Macfadyen.

Wednesday, January 29.

LONDON CHEMISTS' ASSOCIATION, Holborn Viaduct Hotel, at 3.30 p.m.—General Meeting.

LONDON COLLEGE OF CHEMISTRY, ETC., Venetian Chamber, Holborn Restaurant, at 7 p.m.—Annual Dinner and Distribution of Prizes.

NOTTINGHAM AND NOTTS CHEMISTS' ASSOCIATION, Lecture Hall, Conservative Club, Market Street, at 8.30 p.m.—Illustrated Lecture on "Old Belgian Cities," by A. E. Beilby.

PUBLIC AND POOR LAW DISPENSERS' ASSOCIATION, St. Bride's Institute, Bride Lane, Ludgate Circus, E.C., at 8 p.m.—Annual General Meeting, when an Address will be delivered on the "Aims, Organisation, and Extension of our Association," by W. Duff.

CARDIFF AND DISTRICT PHARMACEUTICAL ASSOCIATION.—Annual Dinner.

Thursday, January 30.

BARNSLEY AND DISTRICT CHEMISTS' ASSOCIATION, Royal Hotel, Barnsley, at 6.30 p.m.—Ordinary Meeting.

CHEMISTS' ASSISTANTS' ASSOCIATION, 73, Newman Street, London, W., at 8.30 p.m.—"Plant Misfortunes," by R. E. Lownsbrough.

Friday, January 31.

ROYAL INSTITUTION, Albemarle Street, Piccadilly, W., at 9 p.m.—"The Ions of Electrolysis," by Professor A. Crum Brown.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION, 17, Bloomsbury Square, London, W.C., at 5.30 p.m.—"The Life and History of *Apis mellifica*" (illustrated), by C. E. Male.

Saturday, February 1.

INTER-PHARMACY FOOTBALL LEAGUE.—Metropolitan *v.* London College.

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I remain,
(Signed) Yours faithfully,
HENRY BROWNE, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A. Lond.

THE BRITISH ANTITOXINE MANUFACTURING CO.,
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Notices to Correspondents.

ALL COMMUNICATIONS FOR THE 'PHARMACEUTICAL JOURNAL' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street, Lincoln's Inn, London.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Bathurst, Bellamy, Black, Bryce, Breckon, Christopher, Cowdery, Dixon, Duncan, Eberlin, Ferrall, Gibson, Gill, Gilmour, Glyn-Jones, Goldby, Hall, Hannay, Hardwick, Hill, Hubble, Jones, Judge, Kent, Kermath, Mason, Miller, Moore, Morgan, Murray, Nelson, Noble, Pain, Phethean, Pickering, Provis, Richards, Rigby, Springer, Tippetts, Turver, Volans, Wand, Wardleworth, Wills.

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Members of the Pharmaceutical Society must address all communications with reference to the transmission of the Journal, to the Secretary, 17, Bloomsbury Square, London, W.C.

LONDON: SATURDAY, JANUARY 25, 1902.

ANNOTATIONS.

The National Physical Laboratory at Bushey House, Teddington, is to be opened formally by the Prince of Wales on March 19, and a writer in the *Standard* expresses the hope that, following upon the inaugural ceremony, something will soon be done to make up the ground this country has been losing in the race for commercial supremacy. It is proposed that work such as has been carried on to a limited extent at Kew Observatory will be undertaken on a greatly extended scale in the new establishment, which will closely resemble the Berlin Physikalisch-technische Reichsanstalt. Some ten years ago, Professor Lodge, in an address to the British Association, strongly advocated the establishment in this country of similar institutions to that in Berlin, but it was not until four years later, when Sir Douglas Galton again raised the question, that the Government was formally approached in the matter. As a result, Bushey House was set apart for the proposed new laboratory, and a sum of four thousand pounds per annum from the public funds devoted to its maintenance, or rather less than one-fourth the amount expended annually on the institution in Berlin. Since the value of the German exports of scientific instruments was more than trebled during the ten years ending in 1898, and that result is largely attributed to the impulse given by the Reichsanstalt to the manufacture of such appliances, it is obvious that steps have been taken none too early to put similar manufacturers in this country upon a more satisfactory footing.

British Science has not been at fault, but commerce and industry have not been in open alliance with science here as in Germany, and the result has been an increasing risk of the supremacy in commerce and manufactures departing from these shores. A hundred years ago, as is pointed out in the *Standard* article, French and English makers of scientific instruments were far in advance of German makers, but the position is now reversed, and mainly because in Germany science is nowadays applied in the arts and manufactures to a formerly unheard-of extent. Thus, the two divisions of the Berlin Reichsanstalt are said to have cost altogether more than two hundred thousand pounds, of which twenty-five thousand pounds was a gift from the late Dr. Siemens, while the amount annually expended in salaries, wages, and maintenance exceeds sixteen thousand pounds, or more than four times the amount which has been devoted by the British Government for the purposes of the new laboratory at Bushey House. Both as regards capital expended upon it and income allotted to it the National Physical Laboratory falls far short of the Berlin Reichsanstalt, and, though some liberal gifts have already fallen to the share of the former, it offers exceptional opportunities to would-be generous donors who have science and their country's welfare at heart. The director, Mr. Glazebrook, and his staff may doubtless be depended upon to do their utmost with the means at their command, but they cannot be expected to work the miracle of producing valuable results without the means wherewith to do what is requisite.

The New Laboratory appears likely to prove much better adapted for the required purposes than might be imagined possible in the case of a converted dwelling-house, built nearly a hundred and fifty years ago. It consists of a central block, with four wings, in which the most important instruments of precision will be lodged and secured on stable foundations. One wing has been converted into an electrical and magnetic laboratory, another is being devoted to observations in high temperature thermometry, a third contains a metallurgical laboratory, in which, among other investigations, will be conducted researches into the structure of metals on similar lines to those pursued with such success by Sir W. Roberts-Austen. The chemical laboratory of the institution will be lodged in the fourth wing of the house, while the basement of the building contains an engineering laboratory, and will be largely devoted to the measurement of the resistance of materials and to the testing of pressure gauges and various other instruments. It will be seen, then, that the National Physical Laboratory has been planned and is being fitted in such a manner that it will possess as extensive a scope as its name implies. Its work will be primarily adapted to the national needs, though its results, like those of science generally, will doubtless prove to be of world-wide importance. But it will be no drawback that the whole world benefits ultimately if, during the progress of the work, British manufacturers and merchants become fully aware of the importance of applying science in their daily work, and gradually become emancipated from the rule of thumb.

In Defence of Chemists and Druggists, Mr. Algernon Warren has contributed a luminous article to the columns of the *Western Daily Press*, in which he points out that since 1868—when the sale of certain poisons was restricted by the Pharmacy Acts—the public has enjoyed greater immunity from risk than heretofore. The reason of that, he points out, is that the retailing of those substances became restricted in 1868 to a class of persons who, by the nature of their business and the studies incumbent on them prior to qualification, had acquired an intimacy with the properties of poisons, which other traders do not ordinarily possess. The qualifying examination which must now be passed by candidates for registration necessitates an intimate knowledge both of the nature of poisons and of the regulations under which they may be distributed to the public. Consequently it has, from the time of its institution, acted as a safeguard for the public, and, though the restrictions imposed upon the retailing of poisonous substances have necessarily caused a certain amount of inconvenience, it is unhesitatingly asseverated that the general benefit to the public has been great. "Opportunity makes the thief," quotes Mr. Warren, with evident approval, and he asserts that the unrestricted sale of poisons would certainly lead to their purchase as means to bad ends.

A Bill is Now Being Promoted, as Mr. Warren proceeds to point out, with the object of altering the law relating to the sale of poisons and poisonous compounds used for agricultural and other trade purposes, its general purport being to permit other persons than registered chemists to retail poisons not intended for medicinal purposes. Certain precautions are suggested in the Bill, with the object of preventing the indiscriminate distribution of the poisonous substances referred to, but the Bill, if passed into law, would obviously be but the thin end of a wedge which it would be easy to drive farther in later, with the result that the safeguards provided for the public by the Pharmacy Act of 1868 would become things of the past. As will be seen, on referring to the article at page 62, Mr. Warren skilfully refutes the arguments of the supporters of the Bill, one after another, and concludes by pointing out that it is only the registered chemist, intimately acquainted with the precautions which should be observed in dealing with poisons, who should be permitted to act as dispenser of such substances to the public. As he clearly puts it, the element of safety will be conspicuous by its absence should poisons and poisonous compounds be freely vended over the counter of the general dealer, who has had no examination to pass touching their nature and properties, since sealed packages are capable of being perforated, and the contents may be withdrawn for other purposes than those for which they are destined, and the proposed stipulation is, therefore, inadequate. The qualified pharmacist, too, knows what to do in cases of emergency, when poison has been misused, whereas the seedsman or ironmonger would in nine cases out of ten be helpless to assist, if called upon to counteract the deadly effect of a poison purchased ostensibly for agricultural or horticultural purposes, but misapplied.

THE POSITION OF THE CHEMIST AND DRUGGIST is certainly not one of roses, and it is encouraging to find that fact so fully recognised as it is by Mr. Warren. At a cost of close and assiduous brainwork the pharmaceutical student has to spend years in acquiring the knowledge requisite for passing the examination demanded by the State as the condition of qualification. When qualified and duly registered he must exercise vigilance daily. Again, unlike most other traders he is compelled to stock things for sale, which are indispensable to his calling, though he may not sell them as he likes, but must vend them strictly in accordance with stringent legal enactments, while his mental strain is often great, as a mistake on his part may lead to fatal consequences. Over and above that the return is quite inadequate, the days of uniform large profits on a small turn-over being gone for ever. If, therefore, the chemist's chance of a livelihood be diminished by a measure calculated to endanger the safety of the public for the convenience of a minority, it is not exaggerating matters to say there is every reason for anticipating that some of those who now advocate it will live to regret that they ever did so. It would be well if Mr. Warren's article could be reprinted and scattered broadcast throughout the country. The newspaper in which it appeared originally circulates only in the West of England, but the question raised is one of national importance, and the dissemination of accurate information on the probable results of the establishment of free trade in poison could not fail to be attended with manifold advantages.

THE DRUG DISPENSER'S DUTIES AND DANGERS are also commented on by a well-informed writer in *Chambers's Journal*, who appears to possess a better knowledge of his subject than is usually manifested in articles published in the lay press, but is probably not a pharmacist. Nevertheless, he does a useful service in showing clearly that there are quite as many drawbacks as advantages in the business life of the average chemist and druggist. It is explained to the reader that the chemist does not worry about labelling bottles and performing much other detail work merely as a matter of form; also that there is good reason for the chemist's refusal to supply deadly poisons without question to anyone who may ask for them. Methodical precautions, it is pointed out, must be observed, in the public interest and because the law requires it, though the conscientious chemist usually goes far beyond what the law requires. The troubles and risks which beset the pharmacist's path are clearly portrayed at some length, the writer having evidently been at considerable pains to secure accurate information, while blessed with the skill that is required to convey information accurately to other people. Curiously enough, the whole article leads up to a reference to the work of the Departmental Committee which is at present considering the scheduling of poisons. But the whole subject is dealt with in an eminently fair spirit, and, so far as the business of chemists and druggists is concerned, nothing but good should come from the publication of this able and instructive article.

THE EMERALD GREEN PROSECUTION, reported at page 74, can only be stigmatised as an absurd one. likely to bring the provisions of the Pharmacy Act into contempt, besides going far to strengthen the hands of those persons who are now exerting themselves to such a remarkable extent to tamper with the wise restrictions imposed by the Legislature in 1868. It would be interesting to know who instigated the prosecution. The Corporation of Leeds was the prosecuting body, but it is difficult to imagine that any person in the Leeds Town Clerk's office should have originated the idea of suggesting that a green pigment ought to be regarded as a preparation of arsenic within the meaning of Part I. of Schedule A. Strictly, no doubt, it is such, but the exercise of even a little commonsense should lead public authorities to abstain from stretching the law unduly. It is not an uncommon occurrence for the Council of the Pharmaceutical Society to be accused of enforcing the provisions of the Pharmacy Act in an unduly harsh manner, but the ignorance of the accusers is the only ground for such a charge. Nothing even remotely resembling the prosecution at Leeds has ever been sanctioned by the Pharmaceutical Council, and public authorities would do well to take a leaf out of the Council's book. Possibly, some supporter of the "Traders in Poisons and Poisonous Compounds for Technical and Trade Purposes' Protection Society" might be able to explain why this emerald green case was instituted? Certainly, no friend of chemists and druggists can have been concerned in the matter.

VANADIUM COMPOUNDS have not hitherto been applied to any very considerable extent for industrial purposes, though the capability of vanadic acid to effect the combination of oxygen with sulphurous oxide appears to have been observed some years ago, and the possibility of utilising that property in connection with the manufacture of sulphuric oxide was suggested in Meyer's 'Jahrbuch der Chemie' for 1899. The combination of oxygen and sulphurous oxide effected by contact with vanadic acid and an elevated temperature is one of those changes which are classed under the somewhat obscure designation of catalysis, and first observed in the case of platinum, by Humphry Davy in 1817, and further studied by his brother, Edmund Davy, as well as Döbereiner. Within the last few years the catalytic action of finely divided platinum has been turned to account in the manufacture of sulphuric anhydride, which is now in large demand for the production of artificial alizarine and indigo. According to a recent statement in the *Chemiker Zeitung*, vanadic acid can be substituted for platinum so successfully that sulphurous oxide can be converted into sulphuric anhydride to the extent of 84 per cent. when a mixture of the gases is passed over asbestos coated with vanadic acid and heated to about 465° C. A patent has been applied for by E. de Haën, of Hanover, and it is stated the catalytic action of vanadic acid remains unaltered for a considerable time. The recent discovery of an abundant source of vanadium ore in America is likely to be of much importance for this application, for, in addition to the possibility of regenerating the vanadic acid in the contact mass whenever its action is reduced the probable reduction in the price of vanadium will contribute to the success that is anticipated from its application in the manufacture of sulphuric anhydride.

The Supply of Lymph for Re-vaccination is the subject of a communication received from the Secretary to the Local Government Board, who has been directed by the Board to state that the continuance of small-pox in London and its appearance in other parts of the country have led to a very sudden and considerable increase in the number of persons desiring to be re-vaccinated. In the opinion of the Board, there can be no doubt that this increase is largely due to the very common failure on the part of large numbers of the population to take the necessary precaution of re-vaccination at proper intervals. The Board also desires to draw attention to the fact that its statutory duty in regard to the supply of glycerinated calf lymph is limited to supplying it to public vaccinators, and for purposes of primary vaccination only. In face, however, of the outbreak of small-pox, the Board has not limited itself to that duty, but has, up to the present time, met the demands of public vaccinators for lymph for re-vaccination also. To enable that to be done, the Board has made considerable additions to its establishment for the production of lymph, and is now issuing to public vaccinators a quantity very much in excess of the normal supply. While, however, the Board is desirous of complying with the applications for lymph for re-vaccination as far as practicable, the supply which can be produced is subject to limitation, and it may be found impossible to meet all the applications made. In such circumstances preference must be given to applications from places in which small-pox is known to exist, and public vaccinators in whose district small-pox is spreading are therefore asked to state that fact in making applications for lymph. It is also stated that the Board would be prepared to sanction any necessary expenditure incurred by the Guardians of any Poor-law Union who, for purposes of re-vaccination, may find that they have to supplement from other sources the supply of lymph obtained from the Department, and satisfaction is expressed at the fact that there is a considerable quantity of glycerinated calf lymph now available from other sources, which there is no reason for regarding as other than satisfactory.

The Metric System is legalised in Great Britain, but yet virtually unknown to the great mass of the people resident in these islands. Attempts, not few, have been made to induce Governments and people to make a virtue of what should be a necessity, and, at the cost of a trifling inconvenience, enforce and practise a system the general use of which must obviously effect an enormous saving in time, labour, and money. So far, however, the results have not been encouraging, and the metric system seems nearly as far off becoming a national institution as ever it was. The latest attempt to hasten an inevitable reform has been made at a general meeting of the Convocation of the newly-constituted University of London. On that occasion it was moved by Mr. W. Pringle and seconded by Sir Philip Magnus that a resolution should be adopted declaring that legislation should be promptly undertaken—in the interests of commerce, science, and education—to make the use of the metric system of weights and measures compulsory for all purposes in this country after a proper interval. The proposition was agreed to, and the Senate of the University requested to forward the resolution to the Board of Trade, the body which may be regarded as the supreme arbiter on the question, inasmuch as it must decide the feasibility of the proposal. Speaking in support of the motion, Sir Albert Rollit urged that the present terminology is prehistoric, the weights and measures in common use representing the hands, feet, and nails of our dead ancestors. There can be no doubt whatever, he added, that the non-adoption of the metric system is an impediment to British trade, and that the object to be pursued in this direction should be the union of the highest culture with the commerce of the present day. It is interesting to note, by-the-way, that Sir Albert Rollit is also taking the lead in moving for the establishment of a degree in commerce by the University of London.

The Hypertrophy of the Orange referred to by a correspondent last week, consisting in the occurrence of a small secondary orange inside and near the apex of the ordinary orange, is by no means an unfrequent occurrence. A variety of orange in which this growth has become a characteristic feature has been in commerce for several years under the name of the Californian navel (often misspelt naval) orange, from the peculiar appearance of the open apex of the orange, exposing part of the small inner one, and thus bearing a distant resemblance to the human umbilicus. This variety is usually free from seeds, and is now obtainable at any good fruiterer's. The same growth sometimes occurs in other oranges, but not exposed to view. Dr. Masters, in his 'Teratology,' remarks, under "Pleiotaxy of the Gynæcium," p. 389:—"The orange is one of the plants most frequently subject to an augmentation in the number of carpellary whorls. Sometimes this is due to the stamens assuming the guise of carpels, but at other times the increase occurs without any alteration in the stamens or other organs. If the adventitious carpels be exposed they are covered with yellow rind, while those portions that are covered by the primary carpels are destitute of rind." In the navel orange the growth appears to be due to what is known as median or central proliferation, and is allied to the kind of growth one sometimes sees in roses, in which a second flower bud is seen to occupy the centre of a rose in flower, and sometimes to grow considerably beyond it. A flower may be theoretically considered as a stem in which the internodes between the leaves are not developed, and in which successive series of leaves are transformed respectively into calyx, corolla, stamens, and carpels. If, then, the stem, instead of being terminated by the carpels, be prolonged beyond them, a second flower or fruit may be formed inside or beyond the first fruit. This appears to be the case in the navel orange, in which a central thread proceeding through the fruit is seen to widen out into the small secondary fruit, of which each of the carpels, when separated at the tips, as they often are, show traces of a style. Another curious variation of the fruit, in which a second row of distinct carpels is formed inside the first row, the whole being exposed to view, is figured in Masters's 'Teratology,' p. 75; and a third in the stamens are replaced by pistils on p. 303. The only other abnormal orange which is regularly grown as a fruit (in Algeria, etc.) is the variety known as Buddha's claw, or the horned orange, in which the original carpels are elongated and tapering, and nearly free for a considerable part of their length. This may sometimes be purchased at fruiterers' shops in France, but is rarely offered for sale in this country.

LEGAL INTELLIGENCE.

Proceedings under the Pharmacy Acts.

The Sale of Emerald Green.

At the Leeds City Police Court, on January 17, before Mr. C. M. Atkinson, Taylor's Drug Company, Limited, was summoned (1), for having sold a preparation of arsenic without labelling the wrapper; (2), for having sold it to a person unknown to the seller, and (3), for having omitted to make an entry in a book to be kept for the purpose.

Mr. T. Thornton, who prosecuted on behalf of the Corporation, stated that the defendants were "store chemists," with their principal office in Guildford Street, Leeds. They were charged on three informations under Section 17 of the Pharmacy Act of 1868. On November 21 an Assistant Inspector of Foods and Drugs visited their branch shop in Waterloo Road, Leeds, and was served by an assistant with half a pound of "emerald green." The substance was wrapped in a wrapper which had no label on it, but which gave the name. There was no reference to poison on it. The purchaser was unknown to the defendants and no entry was made in any book whatever. "Emerald green" was a substance the bulk of which was copper aceto-arsenite. It was commonly used for colouring walls.

Mr. Harrison: It is not a food or a drug.

It was, added Mr. Thornton, a reprehensible practice to sell such a preparation to a person who had not the slightest idea that it was anything but harmless.

Mr. J. Harrison, who appeared on behalf of the company, did not deny the sale, though he submitted that the offence was absolutely a technical one. No one, he said, ever thought before this sale that such a commodity came under the provisions of the Pharmacy Act. In the ordinary sense it was not a poison which might be taken, nor was it in any way used either in regard to medicine or food. It was not the kind of article sold specially by chemists or those who dealt in poisons, but in reality was sold mostly by painters or by oil and colour merchants. In some cases it might be kept in stock by druggists, but grocers and others sold it. It was used, to employ an Irishism, he said, for "whitewashing." The shop at which it was purchased was more of a store than anything else, and no poisons were sold at it. Nobody considered the preparation as a poison before, and it certainly had not been considered generally in the trade as such. He believed that that was the first prosecution of the kind in the kingdom, at any rate it was the first in Leeds. His clients agreed that great care was important in dealing with preparations of that kind, and they had already given instructions to the shops that the article was to be treated as poison. In fact, in cases where they did not keep a chemist they had withdrawn the article altogether. Mr. Harrison reminded his worship that a company was not a person within the meaning of Section 17; but he (Mr. Harrison) would not take that point. It was not his wish to ride off on a technicality. The wrappers bore the names of the sellers, Taylor's Drug Company, so that there was no concealment whatever.

The Stipendiary Magistrate agreed that there was no question of concealment; it was only one of principle. He asked if there had been cases of people poisoned.

Mr. Harrison replied in the negative.

Mr. Cameron, the Medical Officer of Health for the city, said that it was well known that wall papers containing arsenic were exceedingly dangerous, the malady taking the form of chronic poisoning. Wall-paper poisoning produced sickness and an inflammatory condition of the eyes.

The Stipendiary Magistrate remarked that proceedings of that nature would not stop the use of the preparation, as it would be only necessary to wrap it up in a particular form.

Mr. Thornton observed that it would give every purchaser notice that it was a poison.

Mr. Harrison said he supposed that the only object of the proceedings was to call attention to the fact. The firm had sold the article for the purpose mentioned exactly as received from the wholesaler, and had acted quite innocently if they had committed a technical error. It struck him as being unnecessary to take out three summonses.

Mr. Thornton said he would be content with a decision on one of the summonses.

Mr. Harrison pointed out that the article was not in the B.P., nor in any of the druggists' text-books.

A fine of forty shillings was imposed on the first summons, and the costs of the summonses were levied on the other two.

Sale of Food and Drugs Acts.

Boric Acid as a Preservative.

At the Liverpool City Police Court on January 15, before Mr. Stewart, the stipendiary magistrate, a fish dealer in Scotland Road, Liverpool, was summoned for selling potted shrimps containing a large proportion of boric acid.—Mr. Sanders, who prosecuted, referred to the report of the Royal Commission on Food Adulteration, and said that preservatives in fish were found to be absolutely unnecessary.

Inspector Baker gave evidence to the effect that he purchased three pots of shrimps from the defendant's shop and submitted them to the public analyst. The samples were found to comprise 80 per cent. of shrimps, containing 61 grains of boric acid per lb.; 20 per cent. of butter, containing 12 grains of borates, calculated as boric acid. The whole sample contained, on the average, 51 grains of boric acid.

Mr. Brighouse, who appeared in the interest of the vendor, remarked that the fish were bought in the neighbourhood of Southport. He contended that the boric acid had come from the butter in which the shrimps had been boiled and potted. His clients would like to have had the shrimps and the butter analysed separately, but he was told that this could hardly be done.

Richard Rimmer, who potted the shrimps, and had done this work for thirty years said that he had not put any boric acid in the fish; in fact, he did not know what boric acid was.

Mr. Sanders further explained that the Royal Commission made no recommendation as to boric acid in ordinary food, and in cases where it might be allowed they did not recommend more than half a grain per lb., but the samples mentioned in the summons contained 51 grains to the lb.

Mr. Stewart, who expressed the opinion that the use of preservatives for shrimps was unnecessary, and enabled dealers to sell stale ones as fresh, considered the case proved. He said the presence of the boric acid was either due to the butter or was put in by those who boiled the shrimps. In the circumstances, however, defendant would only be fined 10s. and 17s. costs.

A Magistrate's Estimate of Expert Witnesses.

At Westminster Police Court, on January 15, before Mr. Shiel, Piper's, Limited, of 44, Warwick Street, Pimlico, were summoned by the Westminster City Council for selling an article of food, namely, Demerara sugar, not of the nature, substance, and quality demanded, the same being "sugar dyed with an organic colouring matter foreign to sugar."

Mr. Allen, who appeared for the City Council, said that he understood this was to be made a test case. He believed some technical objection was to be taken to the analyst's certificate.

Mr. Sheil said it was possible to get any number of experts on either side by paying their fees. Any number of learned scientific gentlemen would swear one thing, and an equal number of learned scientific gentlemen retained on the other side would swear to the contrary. Ultimately, however, he adjourned the case for the matters of law to be argued before going into the facts.

Tincture of Opium.

At Bishop Auckland, on January 9, Mr. William Bentham, chemist and druggist, was summoned for selling tincture of opium deficient in proof spirit. The certificate of the County Analyst, Mr. F. W. K. Stock, stated that the drug, after an allowance of 7 per cent. had been allowed for trade handling, showed a deficiency in proof spirit to the extent of 22·72 per cent.

For the defence, Mr. T. C. Atkinson, chemist and druggist (Messrs. Bleasdale and Co., York), was called. He said that the analysis of Mr. Stock was based on the standard of 1885 instead of on that of 1898.

The Chairman of the Bench said he thought it would have been better had Mr. Stock analysed the sample under the latest standard.

On the suggestion of the Bench the case was withdrawn, each party paying their own costs.

Spirit of Nitrous Ether.

At Keighley Police Court, on January 17, Alfred Smith, grocer, Laycock, was charged with selling sweet spirit of nitre which was not of the substance, nature, and quality specified by the British Pharmacopœia. Inspector Randerson stated that he purchased 3 ozs. of sweet spirit of nitre from the defendant an December 6, and submitted a third part for analysis. The analyst reported that the sample contained 1·09 per cent. of ethyl nitrite, or nitrous ether, and 98·91 per cent. of alcohol and legitimate water. The B.P. required that spirit of nitre should contain 2½ per cent. of ethyl-nitrite in its normal condition, and a minimum of not less than 1¾ per cent. The spirit was a volatile fluid, and the ethyl nitrite would evaporate when the bottle was uncorked, but the B.P. made an allowance for detioration. Asked why he put the sample of 3 ozs., divided into three parts, into 2 oz. bottles, and not 1 oz. bottles, witness replied that those were the bottles supplied by the county authorities. He admitted that he had in his possession a bottle covered with blue paper, and that he did not send the nitre to be analysed in a bottle covered with blue paper. He had heard that the blue paper protected the ethyl nitrite from the light, but he did not know whether that was so. He had no instructions to send samples in bottles covered with blue paper.

Mr. Turner, who defended, contended that the case was so trivial that a nominal penalty would answer the requirements of justice. The sample contained 1·09 per cent. of ethyl nitrite; it should have contained 1·75 per cent.; there was not the slightest evidence of adulteration, and the drug had deteriorated in the course of business. Mr. Turner submitted that there was also a ground on which the case should be dismissed, because it did not come within the meaning of the Act. The Act only referred to adulteration practically, and not to deterioration.

The Chairman pointed out, however, that the B.P. allowed a margin of deterioration on their standard, and if that were exceeded, then the responsibility fell upon the vendor. He thought that the drug, whoever it was sold by, should comply with the requirements of the B.P. Defendant said that he had sold nitre for twelve or thirteen years, and that he was the only retailer of the drug at Laycock. He usually bought it in bottles of 1 lb. or 1¼ lb. He bought the drug in question about July or August. When Mr. Randerson called the bottle would probably have been opened a score or two dozen times.

William Foulds, wholesale chemist, Keighley, said that nitre evaporated every time the stopper was removed. He supplied the drug in question to the defendant. Witness obtained his supplies from Messrs. Evans, Sons and Co., manufacturing chemists, Liverpool, who guaranteed that the nitre was fully up to the B.P. standard. He did not know whether that meant the maximum standard or the minimum standard? The drug was only guaranteed until the stopper was removed. The Bench imposed a fine of 1s. and costs, the Chairman remarking that the magistrates took it that the case had been brought rather as a warning to others than as a punishment.

Claim Against a Railway Company.

Luggage or Merchandise?

At Oldham County Court, on January 15, before Judge Bradbury, Joseph Critchley, an herbalist, claimed £1 15s. as damages from the Lancashire and Yorkshire Railway Company.

It appeared that on October 18 the plaintiff went from Oldham to Radcliffe, taking with him a hamper containing bottles of medicine, which was placed in the guard's van and subsequently transferred to the guard's van of another train. It was labelled "glass," but at Radcliffe the guard flung the hamper out on to the platform, smashing forty-four of the bottles.

Mr. Shimeld, for the defence, urged that as the hamper contained merchandise, not personal luggage, the passenger was not entitled to have it carried free of charge.

His Honour held, however, that the company had accepted the hamper for carriage, and must use reasonable care. He said there would be a verdict for the plaintiff for £1 and costs.

Damages for Wrongful Dismissal.

Bernhard v. Erasmic Company, Limited.

In the King's Bench Division of the High Court of Justice on Monday (January 20) the trial of this action came before the Lord Chief Justice and a special jury. The plaintiff, Mr. Edgar Hugh Bernhard, brought his action against the Erasmic Company, Limited, of the Bank Quay Soap Works, Warrington, claiming damages in respect of wrongful dismissal and for arrears of commission. The defendants by their pleadings justified the dismissal, but this defence was now withdrawn, so that the only question was the amount of damages.

Mr. C. F. Gill, K.C., and Mr. Montagu Lush appeared for the plaintiff; Sir Edward Clarke, K.C., and Mr. Shearman for the defendants.

In opening the case, Mr. Gill said the defendants had taken the only possible course open to them by, at the very last moment, stating the question for the jury was the amount of damage to be paid to the plaintiff. The plaintiff was a young man of twenty-nine years of age, who was educated at King's College.

The Lord Chief Justice asked whether, as justification had been withdrawn, the defendants could not go a little further.

Counsel having conferred, a settlement was arrived at.

Sir Edward Clarke said he was glad to say that the time of the jury would be saved. But before stating the result arrived at, he wished to say a word in justice to the plaintiff. He quite understood the desire that the matter should be investigated in Court, in order that there might be a report generally which showed that there was no complaint made with regard to the plaintiff. Having regard to the circumstances of his dismissal from defendants' service, and the statements which were then made, the directors were bound in honour, and he as their counsel ought, on their behalf, to say that they were not in a position to find any justification for the statements injurious to the plaintiff which might have been made. He had agreed that a sum of money should be paid to the plaintiff in satisfaction of all damages and costs in connection with the action.

Mr. Gill said the plaintiff was summarily dismissed by the defendants, for whom he had done valuable work, on information given to them that he had accepted commission. There was absolutely no foundation for this statement. Circulars were sent round to the trade, in which it was stated that Mr. Bernhard had been summarily dismissed, and the result was, of course, disastrous to this young man. There was only one way to clear his character, and that was by having the case tried out in open Court or getting a statement which would place his character beyond suspicion, and the payment of such a sum by the defendants as would satisfy everyone that the company had done all in its power to remedy the wrong it had caused.

The Lord Chief Justice said the statement made by defendants' counsel amply justified the plaintiff in bringing the action, and made it impossible for anyone to say that he was not justified in so doing.

The jury having returned a verdict for plaintiff for £2,250,

Sir Edward Clarke said the defendants had paid into Court £44 4s. 10d. in respect of arrears of commission, and this sum would be paid to the plaintiff in addition to the £2,250.

POISONING CASES AND INQUESTS.

Spirit of Salts.—The East Kent Coroner (Mr. R. M. Mercer) held an inquest at the "Royal Oak," Ashford, on January 13, respecting the death of Florence Ann Kemp, who took some spirit of salts on May 16 last, when suffering with pains in her head, and died on January 12.—The jury found that death was due to peritonitis following perforation of the bowel, in consequence of a dose of hydrochloric acid being taken in ignorance of the poisonous contents of the bottle.

Laudanum.—At Liverpool, on January 18, a verdict to the effect that "Death was caused by opium poison taken by misadventure" was returned in the case of Edward Heatley (40), sewing machine salesman, who had taken an overdose of laudanum. It was stated that he had suffered from a painful disease, and that a short time before his death he visited a chemist's shop and obtained an ounce of laudanum, being warned at the time of its dangerous nature by the assistant who supplied him.

Infants' Preservative.—An inquiry into the circumstances attending the death of the infant child of a timekeeper named George Bellamy, living at Wadsley Bridge, was held by the Sheffield Coroner on January 17. The mother of the child had bought from a local chemist a quantity of "Infants' Preservative," and administered several doses to the infant, which subsequently became very ill, and was taken to the Royal Hospital, where it died. Dr. A. Graham, house surgeon at the hospital, said the child seemed to be in a state of stupor, and under the influence of a narcotic when it was admitted. He thought it must have been given some strong sedative, and the bottle from which the mother had taken the soothing mixture smelt strongly of opium. The child had all the symptoms of narcotic poisoning.—The Coroner said the mixture smelt much too strong (*sic*) to give to a month-old child, especially when the bottle was labelled "free from laudanum." Some years ago a concoction was brought out and labelled "quietening mixture." That was the best name it ever had. A post-mortem examination must be made, as it was tantamount to manslaughter if the mixture labelled "free from laudanum" contained opium.—The inquiry was then adjourned.—At the adjourned inquest, on January 20, Dr. Graham gave the results of the post-mortem examination. He said he had been unable to discover any traces of opium poisoning, but he found that both lungs were in a consolidated condition, and that death was undoubtedly due to pneumonia.—The Coroner said that it was a good thing that the post-mortem examination had been made, as there would otherwise always have been suspicion in the case. The jury returned a verdict of "Death from pneumonia."

MIDLAND PHARMACEUTICAL ASSOCIATION.

At a meeting of this Association, held on January 16, at the Birmingham University, Mr. A. W. Gerrard, F.C.S., took the chair, and

Mr. F. H. Alcock, F.I.C., read a paper on

Tincture of Cinchona and its Assay.

The author began his paper by calling attention to some old samples of tincture of cinchona which had "gone wrong," having deposited much sediment at the bottom and on the sides of the bottle, and the liquid having become of a light colour. On removal of the sediment, weighing 0·090 Gm., from 15 C.c. of tincture and testing for alkaloid by the lime treatment as for the cinchona bark assay, only a small amount of alkaloid was found to be present. This question of deterioration of astringent preparations has received attention before. The first who publicly made the complaint was Mr. Brown, of Dover, in a letter to the Editor of the Journal (Vol. 63, page 576), when he referred to such preparations as rhatany, kino, logwood, and red gum. Later (Vol. 65, page 638), the author called attention to some of these, and especially named the liquor krameriæ concentratus, suggesting that it might make an excellent coaguline, for the stopper of the containing bottle had stuck so firmly that it could not be removed at all. Several reasons have been offered for this peculiar change. To remove the coating on the inside of the cinchona bottle was a difficult matter until liquor potassæ was tried, when it yielded at once, forming a deep rich red coloured and clear liquid. This suggested a plan for the assay of the B. P. tincture. The official process presumably is to take 10 C.c. of the tincture and deal with it as though it were 5 C.c. of the liquid extract, and using the prescribed quantities throughout. Attention has been called (*P.J.* for July 27, 1901) to the troublesome nature of this process when applied to the liquid extract, and a suggestion is there made to overcome the difficulties. In the assay process, when operating on the tincture, the difficulties are less, but even then one can quite understand how inexperienced analysts can "go wrong" when assaying this preparation, and it is not surprising that highly experienced analysts can differ almost to a serious degree when this process is adopted. For the purposes of trying the alcoholic solution of potassium hydrate plan on the tincture a specially prepared tincture was obtained as follows. It should be stated that the bark operated upon was obtained from the London Docks, was of the official kind, and contained 6·23 per cent. of total alkaloids apportioned thus:—

Quinine and cinchonidine............	1·20	per cent.
Cinchonine and amorphous alkaloid .	3-90	,,
Additional alkaloid....................	1·13	,,

The last item needs explanation, which can be gathered from a letter written to the Editor (*P.J.* 59, page 255, September 11, 1897) by the late Mr. W. H. Mortimer, who found when assaying a sample of cinchona bark that 0·8 per cent. of the alkaloid was left in the filtrate after the removal of the second item of the above analysis. Dr. Attfield, in his Report (1898) says: "Possibly he had not allowed the mixture, after the addition of the ammonia, to stand long enough." But after a reasonable time—say a few hours—it still retains alkaloid according to the amount of ammonia used and the quantity of filtrate obtained. Four ounces of the powdered bark were macerated as directed, and percolated with 70 per cent. alcohol until nearly one pint had been collected. The marc was then washed with distilled water until percolate was free from alkaloid, removed from the percolator, and allowed to dry thoroughly in the air. The aqueous percolate evaporated to dryness and transferred to the tincture, macerated three days and filtered. Thus obtained, the tincture had a s.g. of 0·919, yielded total solids 6·6 per cent. w/v, alkaloids 1·07 per cent. w/v, and mineral matter 0·25 per cent. w/v. Concerning this last figure it may be stated that many samples of official tincture of cinchona have been examined for amount of mineral matter, and for 10 C.c. was found to be between 0·015 and 0·025 gramme. The following experiments were tried with the tincture:—10 C.c. were mixed with 20 C.c. of benzolated amylic alcohol and 2 C.c. of normal alcoholic potash and placed in a warm place and shaken occasionally. After separation the solvent was removed by pipette and a second lot of 10 C.c. of B.A.A. used and removed and mixed with the first; a third may be used if thought desirable. Then proceed as for the B.P. process, but first removing greasy or waxy matters from the HCl alkaloidal solution by washing with a few C.c. of chloroform. It is found that this treatment gives a more crystalline and satisfactory alkaloidal residue. Other quantities of KOH varying from 0·2 to 1·0 gramme were used, but the results were fairly concordant, hence the lesser quantity was deemed the better; yield, 0·107 gramme. Another experiment was to take 10 C.c. of tincture, add 20 C.c. of $CHCl_3$, and 2 C.c. alcoholic potash solution, and using the $CHCl_3$, three times after distillation, yield 0·115 gramme, which was slightly coloured reddish brown and not entirely soluble in diluted sulphuric acid. Another experiment was to take 10 C.c. of tincture, add 20 C.c. of ether and 2 C.c. of the potash solution, remove, distil, and use twice. Yield, (1) 0·158 gramme and (2) 0·147 gramme. This was therefore not satisfactory. In the official process of shaking out the ammoniacal solution of the alkaloids with $CHCl_3$, it was found that after six washings with the distilled chloroform there still remained traces of alkaloid left in the aqueous portion, as indicated by acidification with diluted HCl and the addition of Mayer's alkaloidal reagent. It may be stated that where much benzolated amylic alcohol is used, that common fousel oil and what is sold as solvent naphtha can be used, provided both are free from residue on distillation, and the latter responds to such tests as s.g. 0·850, solubility in an equal volume of rectified spirit, and dissolves coal tar pitch. Attention was now directed to the marc ex tincture, which was assayed for total alkaloids by the B.P. lime process, and found to contain much alkaloid. This statement is not new, for all are agreed that a suitable solvent has yet to be found which will give a preparation so dear to the heart of the late Mr. Schacht, and which he styled as "bark minus woody fibre." There was not much difference in the results obtained by the following process, which seemed to answer as well as the B.P. plan and was less troublesome. Five grammes bark was triturated in a mortar with 2 grammes KOH (quantities up to 5 grammes have been tried), and 10 C.c. of alcohol after uniformity and KOH had apparently dissolved. The mixture was transferred to a bottle with 50 C.c. B.A.A., and kept in a warm place for one hour, with occasional agitation. The line of demarcation is very clear, and on removal of B.A.A., 25 C.c. more added, well shaken and allowed to separate. Then transferred to filter and washed with 25 C.c. of warm B.A.A., the marc well drained with gentle pressure, followed by the B.P. process. It is wise to wash the B.A.A. with a little water before treatment with diluted HCl, but a trial only gave 0·013 gramme of residue on evaporation, which on ignition left 0·007 gramme, and was no doubt some salt of potassium.

Some of the more important parts having been practically demonstrated to the audience,

The Chairman remarked that he had had considerable experience of the extraction of alkaloids, and as far as emulsification was concerned he thought a good thing was to shake out first of all with absolute ether, and then emulsification did not take place so readily. He had not had a close acquaintance with cinchona bark or its tincture, but it was apparent that, being a dense substance and, therefore, hard, it was not easy for solvents to penetrate and extract the alkaloids. Moreover they were not very soluble in solvent, and, in addition, tannin bodies in the bark held them back. He could quite understand that potassium hydroxide possessed powers of penetration, because it was known to dissolve many substances, such as cellulose, and set alkaloids free, so that they could be easily attacked by the solvent. How far caustic potash might act upon these substances if left long in contact with them he could not say, but workers conducted their processes rapidly, and possibly there might not be much serious destruction. He had chiefly used ammonia, and did not quite understand why so large a quantity of the solution of potash was required in the assay process for the liquid extract of cinchona. It struck him as being excessive. As to the difficulty of emulsification, he met this in the early part of his experience, and found that gentle warmth facilitated separation. Again, slowly rocking the solvent and the liquid in a dish with a surface contact caused the extraction of the alkaloid, and answered, in his opinion, quite as well as vigorous shaking. With regard to the sediments in tinctures he had often found that they made their appearance more especially after they had been kept some time. He rather thought it was due to the union of some of the natural acids of the drugs with the alcohol. Chemical changes were thus set up, with the result that precipitates were formed. If an old tincture were examined it would be found to possess more aroma and to be more agreeable than a freshly-made preparation. He was of opinion, also, that light played a very important part in the production of these sediments, for in an examination of the shop rounds the deposition was found to be greater on the side where the light got at the tincture most.

Mr. G. E. Perry and other members also took part in the discussion, at the conclusion of which Mr. Alcock was heartily thanked for his paper.

CHEMISTS' ASSISTANTS' ASSOCIATION.

A meeting of this Association was held at 73, Newman Street, W., on Thursday, January 16, the President, Mr. J. Wicliffe Peck, in the chair.

After the preliminary business a paper was read by Mr. S. T. Frost, on

Beekeeping.

The paper, which will be published later, was illustrated by specimens of modern bee-appliances, and mounted specimens of various kinds of bees and brood combs, also of the wax moth.

At the conclusion of the paper an interesting discussion took place, several questions being asked and answered.

The meeting then adjourned.

BLACKPOOL AND FYLDE CHEMISTS' ASSOCIATION.

The annual dinner of this Association was held at the Palatine Hotel, Blackpool, on Wednesday, January 15, and was attended by nearly every chemist in the district, being the largest and most enthusiastic meeting ever held in Blackpool. The chair was taken by Mr. H. P. Withers, and among the visitors were Mr. John Taylor, of Bolton; Mr. Lord Gifford, of Blackburn; Mr. G. E. Parker and Mr. Nall, of Messrs. Evans, Sons, and Co.; and Mr. Crossley, of Messrs. Oldfield, Pattinson, and Co.

Mr. Richardson proposed the toast of the

Pharmaceutical Society,

and said it was a deplorable fact that two-thirds of the chemists in business should be outside the Pharmaceutical Society. The Pharmaceutical Society was doing very good work. It had put the Preliminary and Minor Examinations on a proper footing, and had attempted to deal with the limited liability company problem.

Mr. Lord Gifford, in responding to the toast, said his past aspiration, as a secretary of a local association, had been to get a better organisation and to get every chemist on the roll of the Society. That was the most important work chemists could do. Let them get a strong Register, and it would follow that they would be able to enforce a stronger claim on the Legislature. It was for that reason he felt so strongly regarding organisation, since it was most essential that members of the drug trade should be in touch with one another. The first aim of the Council of the Society was the benefit of the craft, and the members had a oneness of aim to that end. He was, therefore, extremely hopeful of the future, because the chemists' position was strong, and they only asked for what is quite reasonable. There was only one difficulty they had to face and wished to fight, and that was unqualified practice. It should be possible to prevent unqualified persons from practising pharmacy. His experience on the Council had greatly strengthened the conviction that unqualified ownership was incompatible with professional position. Every member of the Council could see that, and the point would soon be brought into prominence. Many chemists did not appreciate the fact that having a qualified man in a shop did not make qualified practice. He believed the Council recognised that fact, and if it understood the matter public opinion would do so ultimately. With regard to the sale of poisons, there should be such a broadening out as would include all preparations capable of being turned to evil account by would-be murderers or suicides. To make a mere pretence of doing that by State regulations was even worse than doing nothing, as it created a public sense of security when there was no real safeguard whatever. Labelling, although very useful to prevent mistakes, only served to act as a guide to those who intended to take away human life.

Mr. John Taylor then proposed the toast of the

Blackpool and Fylde Chemists' Association.

He said it was well to remember the important part played by local associations in their business life, and he was glad to know that not many chemists in the district were outside their Association. They had not rested content in Blackpool and Fylde with foregathering festively. At the last by-election for their division they showed themselves a living Association. Their Secretary had them within call, and they promptly attended to their interests in a businesslike way. Knowing many Blackpool residents, he knew that they, as a body of pharmacists, had won the high esteem of their fellow-citizens, and in that reputation they had a powerful lever for the defence of their interests when assailed. And they might before long find it necessary to bring pressure on their Parliamentary representatives. They knew there was a Departmental Committee on Poisons sitting. They knew also that in that Committee was an element hostile to the Pharmacy Act of 1868—men who would like to substitute for the living qualified pharmacist a series of mechanical regulations. Unfortunately for them, they were not directly represented on the Poisons Committee, and when that Committee reported it might be necessary to take instant action in the defence of the principle of the Act of 1868—viz., that the safety of the public required the sale of poisons to be in the hands of registered and qualified men. They knew that the monetary value of the trade in poisons was little to the individual, so it was not selfishness which dictated their policy. But they knew also that the country was not so much better than it was in 1868, that the safeguards which the wisdom of Parliament then imposed could now be cast aside. Verbal and mechanical regulations could never take the place or perform the service of a live common-sense pharmacist.

Mr. C. H. Turver responded to the toast. He said the Association consisted of more than seventy members, and it now remained for them to put their shoulders to the wheel, as they had an admirable organisation and useful officials. The Honorary Secretary, Mr. J. Sankey, was indefatigable in his zeal and untiring in his energy in pharmaceutical matters, but if their organisation was to be any good it must be used. It was, after all, only a tool in the hands of its members, and depended for its efficiency on the interest they took in it. Thoroughly good work had been done during the past twelve months. Their local M.P. had pledged his support to any Bill for the benefit of pharmacy, they had a chemist on the Town Council, and the Technical Instruction Committee had provided a large, well-lighted laboratory, with all latest appliances, and a thoroughly competent instructor, for instruction in chemistry. He strongly urged on the Association that Vice-Presidents should be elected for each township in the division, and that it should be the duty of such Vice-Presidents to see every chemist in their respective divisions, to call meetings to confer on matters of purely local interest, and generally to be in touch with the local chemists as well as with the officials of the division.

Votes of thanks were enthusiastically accorded to the Hon. Secretary, the Chairman, and to the vocalists who had taken part in the musical programme.

NORTHAMPTON CHEMISTS' ASSOCIATION.

At a meeting of this Association, held at the Black Boy Hotel, Northampton, on Friday, January 17, the President, Mr. W. McKinnell, took the chair, and the Secretary (Mr. F. Cowdery) reported that he had written to the chemists of Northamptonshire, inviting them to attend a meeting of the Association to discuss the possibility of joining the Association. He had received twelve replies, from chemists at Kettering, Peterborough, Rushden, Desborough, Wellingborough, Earls Barton, Daventry, and Rothwell. Ten of those were completely favourable, one was unfavourable, and the twelfth, while agreeing with the proposal, pointed out difficulties in the way of attending meetings at Northampton because the train service was so inconvenient.

Mr. E. C. Ashford moved, and Mr. W. D. Mayger seconded, "That the Secretary invite the county chemists to a special meeting of the Association at the Black Boy Hotel, Northampton, on Thursday, January 30, at three for four o'clock in the afternoon." It was agreed to leave the reception arrangements in the hands of a small committee, consisting of the President, Mr. Mayger, and the Secretary.

Adjuncts to the Chemist's Business.

Mr. E. C. **Ashford** opened a discussion upon the adjuncts to his business which the legitimate chemist might profitably undertake. After dividing chemists into three classes—the scientific analytical chemist, the dispensing chemist, and the general chemist—he pointed out that the chemist of to-day had to face competition which previous generations of chemists knew not. Doctors did their own dispensing, large dispensaries absorbed a great deal, if not most, of the dispensing which a chemist reasonably might have expected, grocers sold tartaric acid, borax, citric acid, essence of lemon, mineral waters, and a variety of other things; the small shops in the secondary streets of the town sold a great many things which the chemist sold; the ironmonger took up the sale of oils, chloride of lime, and other things; the drapers sold perfumery, violet powder, puff boxes, etc. All these things in former years were sold almost exclusively by chemists, and it was difficult to say what the chemist was to do to compensate himself for the loss of the trade in these things which in years gone by was almost exclusively his. As the Government of the country compelled a chemist to pass hard examinations, it ought to give him some protection in his trade, so that chemists' goods may not be sold by other tradesmen. He suggested that chemists should sell oils, paints, petroleum, and other things, so that the public would go to them for these as well as for drugs; and, personally, he would have no hesitation in selling anything that he thought the public would be likely to ask him for.

A brisk discussion followed, varied opinions being expressed.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION.

At a meeting of this Association, held in the Pharmaceutical Society's House, 36, York Place, Edinburgh, on Wednesday, January 15, Mr. J. G. **Sclater**, President, took the chair, and Mr. **David Harley** read

A Note on Ichthyol,

which is printed at page 63 of this week's *P.J.* There was no discussion on the paper, and

Mr. J. **Hutcheon** next communicated

Some Ideas on the Apprentice Question.

In the course of his paper, Mr. Hutcheon took exception to the views expressed by Mr. William Lyon, in an article published in the *P. J.* of December 21 last. He also pointed out that the apprenticeship difficulty is not peculiar to pharmacy. Apprentice problems in the trades are regulated by trades unions, while in the professions such as law and teaching that matter is regulated by Government. It was contended that the Council of the Pharmaceutical Society is the body to whom pharmacists, as well as apprentices, have to look for salvation regarding the apprentice question. The peculiarity which gives the pharmaceutical profession such a bad name, and keeps youths from entering it was said to lie in the fact that the Council fails to control the individual members in the matter of apprentices, and it was urged that it should do something to fix the hours of work, supply methods of training, and regulate numbers, or the very life of the profession will be endangered. Speaking from the unqualified man's point of view, the author said there are, in the apprentice question, difficulties that are due solely to the natural condition of the pharmaceutical profession. A great amount of the pharmacist's everyday business work is of such a nature as may be quite well and very profitably carried out by unskilled labour, and the fact must be faced that the tendency in the drug trade is towards commercialism and, except in a few outstanding cases, away from science. At the same time, the advance of the sciences in their relation to pharmacy does undoubtedly necessitate among pharmacists a thorough scientific education. To bridge the gulf between the two extremes would require, as an ideal pharmacist, a man who would combine in himself the capabilities for ordinary manual labour with the scholarship and training of a laboratory expert. That, however, is not likely to be generally accomplished among the thousands who compose the trade or profession of pharmacy. The supply of apprentices who will be in a position to present themselves for the qualifying examination may, therefore, be expected to fall very far short of the demand. Two results may ensue—the recognition of the unqualified men and the diminution of the number of pharmacists qualified according to Society standards. The unqualified man will become a necessity, and, when he appreciates the fact, he will raise his own value. He is quite capable of doing the drudgery work of the profession, and it is that and the commercial part which bring in the money. The day may not be far distant when the unqualified man may demand recognition by the Government, and perhaps obtain exemption from the Acts regulating the sale of poisons, the chemist's only stronghold.

At the conclusion of Mr. Hutcheon's paper a discussion took place, in which several members took part.

Mr. **Cowie** said he thought the Society had missed a chance in not doing more to assist unqualified men. The School of Pharmacy did not seem adapted for the rank and file, but catered rather for the sons of gentlemen. He believed every student at Bloomsbury Square cost the Society about thirty pounds. He did not see why the Pharmaceutical Society should not be like South Kensington, and recognise the schools of pharmacy throughout the country. They would not object to be inspected by competent men.

Mr. **Duncan** said the Society was just what the members made it. They could change the Council if they were not satisfied. The Bloomsbury Square School was open to the rank and file, but the men being wise in their generation preferred to go to the other schools. He thought the great difficulty lay in the masters. They made no attempt to train their apprentices, and only tried to get as much work out of them as possible. If the Society could compel masters to train their apprentices it would be a great gain. He thought it was too bad for examiners in their reports to blame teachers for what was really the fault of the masters. He found that students came to him quite ignorant of the simplest processes in practical pharmacy, and he really had to teach them the whole subject of dispensing.

CARDIFF CHEMISTS' ASSISTANTS' ASSOCIATION.

The annual reunion of this Association was held at the Park Hotel, Cardiff, on January 15, when Mr. **Albert Hagon** presided.

The **Chairman** read an interesting communication from Principal Griffiths, of the Cardiff University College, who said there were many difficulties in the way of

Teaching Pharmacy

at the College, but he did not think they were insurmountable. He assured the members of the Association that he would use his best endeavour to establish a satisfactory course of study in pharmacy.

Subsequently an attractive programme of music, etc., was gone through, the chief performers being Messrs. Keast, Hitchens, Dave M'Neill, and J. Williams, and Mr. W. Norrish's banjo orchestra. The proceedings were arranged on "social evening" lines, and proved extremely enjoyable.

HUDDERSFIELD CHEMISTS' ASSOCIATION.

A meeting of this Association was held in the Y.M.C.A. Parlour, on Tuesday, January 14, the President, Mr. R. C. Walshaw, in the chair.

The minutes of the previous meeting were read and confirmed. They included the text of two important resolutions which had been passed and forwarded to the Federation of Local Pharmaceutical Associations and the Dewsbury Association respectively. The former concerned the circular letter sent by the Federation dealing with the question of

Provincial Pharmaceutical Education,

and was as follows:—

> That this meeting is of opinion that it is of paramount importance that the Federation at the present juncture should use its whole influence in agitating for improving the condition of the chemist when educated rather than wasting its time on matters of education, which have been carried as far as it is advisable at present.

The other resolution had reference to the proposed

West Riding Federation,

and read thus:—

> That this Association is unanimously in favour of a scheme to federate the whole of the Chemists' Associations of the West Riding of Yorkshire, and pledges itself to work loyally in such a federation if formed.

In connection with the latter resolution reference was made to the attitude adopted by the Sheffield Pharmaceutical and Chemical Society, as shown in the resolution passed by its Council relating to this proposal. The opinion was expressed that the Sheffield Association had gone out of its way to throw cold water on a scheme which was thought to be in the direction of progress.

Proposed Annual Dinner.

The sub-committee appointed to make arrangements for the proposed dinner, reported favourably on the subject, and it was decided to fix the date for Wednesday, February 5. It is hoped on that occasion to have the presence of Mr. Glyn-Jones, and possibly other members of the Council of the Pharmaceutical Society, as well as representatives of kindred local associations.

NEWCASTLE CHEMISTS' ASSOCIATION.

At a meeting of this Association, held on Wednesday, January 8, Mr. A. Payne, F.C.S., delivered a lecture on

Chromatic Photography,

illustrating his remarks by means of lantern-slides, diagrams, and specimens. Mr. Payne dealt more particularly with the uses of a light-filter, showing its advantages over the ordinary method of taking photographs. Colour photography also received attention, the work of the various workers in this direction being referred to.

A vote of thanks to the lecturer concluded the meeting.

TEES-SIDE CHEMISTS' ASSOCIATION.

The annual meeting of this Association was held at the Albany Restaurant, Middlesbrough, on January 16, the President, Mr. T. Buck, in the chair. The minutes of the previous meeting were adopted, after which the detailed accounts for the past year were read.

The retiring President gave a short *résumé* of the work done by the Association, and especially emphasised the better feeling which had been brought about by the meetings of the Association.

Election of Officers.

The following officers were elected for the ensuing year:—President, Mr. W. R. Brackenbury; Vice-Presidents, Mr. Close and Mr. W. H. Round; Hon. Treasurer, Mr. Buck; Hon. Secretaries, Mr. W. Thompson and Mr. W. Finlayson; Committee, the officials, together with Messrs. Rothwell and Lee. The annual subscription was fixed at 5s. for principals and 2s. 6d. for assistants. The newly-elected President took the chair vacated by Mr. Buck, and proceeded to read a paper on "Trade Prospects," after which an animated discussion was raised on the various points and suggestions enunciated by the President.

The meeting closed with a vote of thanks to the retiring President.

HALIFAX CHEMISTS' ASSOCIATION.

The annual general meeting of this Association was held at the Old Cock Hotel, on Wednesday evening, January 15, the President, Mr. W. S. Thompson, in the chair.

Election of Officers.

Mr. Gibson Dixon was elected President for the ensuing year, Mr. W. R. Black was elected Secretary, and Mr. J. W. Tiffany was elected Treasurer. The date of the annual dinner was fixed for February 6.

Obituary.

Bailey.—On January 11, William Bailey, son of Mr. W. H. Bailey, draper, Newark. Aged 24. Mr. Bailey was formerly an apprentice with Mr. Priestley, pharmaceutical chemist, Carter-Gate, Newark, afterwards taking a situation at Manchester prior to entering the South London School of Pharmacy. On leaving the school he took temporary engagements at Hitchin and Sloane Square, London, subsequently returning to his former situation in Manchester. He sat for the Minor Examination recently held in London, but was unsuccessful, and on returning home he was taken ill, and died "from overwork of the brain and weak heart."

Bradbury.—On January 17, Thomas Bradbury, Chemist and Druggist, Glossop, aged 45. Mr. Bradbury had been connected with the Pharmaceutical Society for many years as an associate, and latterly as a member.

Brook.—On January 15, Robert Brook, Chemist and Druggist, Halifax. Aged 71.

Chapman.—On January 20, Edward John Chapman, Chemist and Druggist, Hull. Aged 68.

Duncan.—On January 17, at "Eversley," Prestonville Terrace, Brighton, Robert Duncan, Chemist and Druggist, third son of the late John Duncan, of Leeds, aged 27. Mr. Duncan passed the Minor Examination in April, 1898, and had been a member of the Pharmaceutical Society since 1900.

Fawcitt.—On January 12, Thomas Christopher Fawcitt, Chemist and Druggist, Manchester. Aged 37. Mr. Fawcitt had been connected with the Pharmaceutical Society for many years as an Associate, and latterly as a member.

Fryer.—On January 15, Charles John Fryer, Chemist and Druggist, Wandsworth Road, S.W. Aged 34.

Matterson.—On January 19, Edward Hardwick Matterson, Pharmaceutical Chemist, Dewsbury. Aged 83. Mr. Matterson had been a member of the Pharmaceutical Society since 1870.

Reynolds.—On January 16, at Bungay, James John Reynolds, formerly a Pharmaceutical Chemist, in partnership with Mr. J. Lloyd Bullock, 3, Hanover Street, London, W. Aged 76. Mr. Reynolds was apprenticed with Mr. F. Cupiss, pharmaceutical chemist, of Diss, and entered into partnership with Mr. Bullock in 1855, leaving him about the year 1880, since when he has resided at Bungay, his native place.

Rickerby.—On January 20, Thomas Rickerby, Chemist and Druggist, Liverpool. Aged 70.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

MINERAL OIL IN CRUSHED LINSEED.

L. F. Kebler has met with crushed linseed, the natural fixed oil of which had been removed and replaced by a petroleum oil of about the same density. This observation confirms that of E. H. Gane, who had previously (*Amer. Drug.*, **36**, 4) recorded the fact that the oil yielded by some crushed linseed he had examined was not saponifiable. Kebler estimates that the specimen examined by him contained rather more than 14 per cent. of mineral oil.—*Amer. Journ. Pharm.*, **74**, 39.

COLOURING MATTERS OF GREEN EBONY.

A. G. Perkin and S. H. C. Briggs have examined the yellow dyewood known as green ebony, which is probably obtained from *Excoecaria glandulosa* or *Jacaranda ovalifolia*, and was until recently employed in this country. The wood contains two crystalline colouring matters—excoecarin and jacarandin—in minute quantity. Excoecarin, $C_{13}H_{12}O_5$, occurs in yellow needles (m.p. 219-221°), and is described as a weak, substantive dyestuff with animal fibres. It forms a tribenzoyl compound, $C_{13}H_9O_5(C_7H_5O)_3$, which forms colourless needles (m.p. 168-171°) and a dimethyl ether, m.p. 117-119°, yellow needles, giving fluorescent solutions. On fusion with alkali, it yields hydrotoluquinone ($CH_3:O:O = 1:2:5$), and hydroquinone carboxylic acid, the latter being apparently derived from hydrotoluquinone. Treated with bromine in presence of alcoholic potassium acetate, it forms excoecarone, $C_{13}H_{10}O_5$, the copper coloured needles (m.p. abt. 250°) of which are reconverted into excoecarin on reduction. Alcoholic quinone solution gives a similar compound ($C_{19}H_{14}O_7$?) in green leaflets (m.p. 190°), which is possibly a quinhydrone derivative. Jacarandin, $C_{14}H_{12}O_5$, yellow plates, m.p. 243-245°, resembles luteolin in dyeing property, and gives a diacetyl derivative, $C_{14}H_{10}O_5(C_2H_3O)_2$, in yellow needles (m.p. 192-194°), and a dibenzoyl derivative, $C_{14}H_{10}O_5(C_7H_5O)_2$ in yellow prismatic needles (m.p. 167-169°). With alcoholic potassium acetate yellow needles of the salt, $C_{28}H_{23}O_{10}K$, result, and on fusion with alkali an acid, apparently derived from catechol, is formed. The wood also contains two orange-coloured resins, one of which is a yellow dyestuff, while the other is devoid of any tinctorial property.—*Proc. Chem. Soc.*, **18**, 11.

PHYSOL.

M. J. Wilbert comments upon the suggested use of a peptonising enzyme for clearing out abscesses, indolent ulcers, and necrotic areas, and states that several more or less efficient physiological solvents, intended for external application, are on the market at the present time. He also publishes the following formula for such a preparation, to which he applies the name "physol," that being a combination of the first syllables of the two words "physiological solvent":—Pepsin (U. S. P.), 50 Gm., is dissolved in distilled water, 800 C.c., and the solution mixed with diluted hydrochloric acid, 20 Gm., and glycerin, 50 Gm. Menthol, eucalyptol, and oil of wintergreen, each 0.5 Gm., are then dissolved in alcohol (95 per cent.), 10 Gm., and the second solution is added to the first. Finally, sufficient distilled water is added to make up to 1,000 C.c., the mixture shaken thoroughly with purified talcum, 50 Gm., then filtered through paper until bright. The resulting, clear, light yellow, aromatic solution is said to keep well, without any appreciable change in its peptonising properties.—*Amer. Journ. Pharm.*, **73**, 537.

FORMATION OF PROTEIDS.

According to W. Zaleski, the formation of proteids in plants may take place both from organic nitrogen compounds and from nitrates, even in the dark, though it proceeds much more energetically in the light. Their formation is not effected, as has generally been stated, at the expense of asparagin, but at that of other unknown nitrogen compounds. The secondary formation of proteids out of the decomposition of these substances is illustrated in the case of etiolated seedlings of *Lupinus angustifolius*; their synthesis out of nitrates and sugar in the leaves of *Helianthus annuus*. This latter process may take place in the dark.—*Bot. Centralblatt*, **87**, 277.

MYRICETIN.

A. G. Perkin publishes further information regarding myricetin, the yellow colouring matter obtained from the bark of *Myrica nagi* (see *P.J.* [4], **3**, 177). When air-dried the compound has the formula $C_{15}H_{10}O_8,H_2O$, it is anhydrous at 160°, and melts at about 357°. The compound previously obtained by the action of bromine is tetrabrom-myricetin, $C_{15}H_6Br_4O_8$, and is converted by hydriodic acid into myricetin. Myricetinpentamethyl ether, $C_{15}H_5O_3(OCH_3)_5$—m.p. 138-139°—forms a monoacetyl derivative, $C_{15}H_4O_3(OCH_3)_5(C_2H_3O)$, which occurs in colourless needles (m.p. 167-170°) and on decomposition gives gallic acid trimethyl ether and phloroglucinol monomethyl ether, the latter identified by its diazobenzene derivative (m.p. 250-252°). Myricetin-hexaethyl ether—$C_{15}H_4O_2(OEt)_6$ almost colourless needles, m.p. 149-151°, yields gallic acid triethyl ether and a phenol, probably phloroglucinol diethyl ether (azobenzene compound, yellow needles, m.p. 163-165°). Acetyl-myricetin melts at 211-212° and not at 204-206° as previously stated. The name myricetrin is given to a new glucoside which occurs in the bark of the *Myrica nagi*, and is decomposed by acid into myricetin and rhamnose, $C_{21}H_{22}O_{13} + H_2O = C_{15}H_{10}O_8 + C_6H_{14}O_6$. It closely resembles quercitrin, and its formula when air-dried is $C_{21}H_{22}O_{13},H_2O$; at 160° it is anhydrous and then occurs in pale yellow leaflets (m.p. 199-200°), $C_{21}H_{22}O_{13}$.—*Proc. Chem. Soc.*, **18**, 11.

ANATOMY OF CORIANDER FRUIT.

E. Perrot has obtained very interesting and important results from an examination of coriander fruit in various stages of development. It is well known that ripe coriander fruit, such as is met with in commerce, contains only two vittæ in each mericarp, both being situated on the commissural surface. Perrot shows that the young fruit contains in addition a number of vittæ on the dorsal surface of each mericarp as well as five secreting ducts that accompany as many fibrovascular bundles from the stem and are continuous with corresponding ducts in the stem. The vittæ, on the other hand, are restricted to the fruit and have no connection with any secreting tissue of the stem. As the fruit develops, both the vittæ and ducts on the dorsal surface become compressed and finally break down into tangentially elongated cavities. The thin band of tissue external to these subsequently ruptures and in part perishes, so that the ripe fruit exhibits only here and there fragments of epidermis adhering to the pericarp. The author thinks that the disagreeable odour that characterises the young fruit may be due to the oil secreted in the dorsal ducts and cavities; as the fruit ripens this secretion is lost, the odour becomes agreeable and aromatic, and is then to be ascribed solely to the oil contained in the commissural vittæ. Against this theory, however, must be urged the observation that the oil distilled from the herb and unripe fruits, though very disagreeable at first, becomes less so on keeping.—*Bull. des Sciences Pharmacol.*, **3**, 385.

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CONSTITUENTS OF GUAIACUM WOOD.

E. Paetzold has subjected guaiacum wood and guaiacum resin to renewed investigation, and found that not only the bark of the tree, which was formerly used in medicine, but the wood and the natural resin contains a saponin to which the medicinal value formerly ascribed to the wood may be attributed. This substance is present in the bark and sap wood in comparatively large quantity, but is much less abundant in the heart wood and in the resin obtained from it. Should it be proved that the high estimation in which guaiacum has been held as a remedy for venereal diseases, rheumatism, etc., is due to the presence of this body, it would appear that the bark or sap wood should be substituted for the heart wood or resin now used in medicine. The author proposes to prepare a sufficient quantity of the saponin to enable him to determine whether it should be classed in Professor Kobert's homologous series of saponins.—*Bull. des Sciences Pharm.*, **3**, 407.

REDUCTION OF ALUMINA.

S. A. Tucker and H. R. Moody have investigated the reduction of aluminium oxide, and from a series of experiments conclude that it is not reduced by carbon alone to any appreciable extent, even when exposed to the very high temperature of the electric arc. It is, however, reduced by calcium carbide to the metallic state, according to the equation, $Al_2O_3 + CaC_2 = 2Al + 2CO + CaO$. The carbide is produced during the process from lime and an excess of carbon. Calcium carbide being a body exothermic on decomposition yields up a large number of calories, and thus raises the temperature to a sufficiently high degree. A high ampèrage and voltage should be used for not more than fifteen minutes. A longer time results in the conversion of some of the reduced metal to carbide. The authors state that aluminium carbide is produced from the metal, and not the reverse. Furthermore, the presence of both carbon and a carbide of an alkaline earth is required. Air should be excluded; and the amount of alumina should be in excess of the theoretical amount of coke.—*Journ. Soc. Chem. Ind.*, **20**, 970.

SENSITIVENESS OF THERMO-REGULATORS.

A. W. C. Menzies points out that it is not generally known within what small limits of temperature a bath may be kept constant, using gas heating and the ordinary form of regulator. He has experimented with a glass "horseshoe" reservoir of the usual form, with a capacity of 390° C.c. and an outer surface of about 650 Sq. Cm.; to this reservoir the ordinary U-form regulating tube which contained mercury, was fused on and the glass connections so bent that all the tubes containing enclosed liquid were under the water of the bath. Toluene was used for the expanding liquid, and the stopcock that closed one limb of the U-tube was lubricated with syrupy phosphoric acid. The bath held fourteen litres and was of enamelled iron, with no jacket. The stirrer was driven by a small electromotor, and care was taken that a portion of the vibration of the motor was communicated to the regulator, thus aiding the free movement of the mercury in response to the pressure of the toluene. Finally, the gas supply to the bye-pass was adjusted by a screw-clip in such a way that the bye-pass flame alone was nearly sufficient to maintain the temperature. It was found that, using a tube of 3·1 Mm. bore for the outer limb of the regulator, the temperature of the bath could be kept constant at 18° within a total range of 0·008°, that is, 0·004° on each side of the middle point. After twenty-four days, using unfiltered coal-gas, the actual temperature was the same as at starting, and the closeness of regulation was found still within the above limits.—*Proc. Chem. Soc.*, **18**, 10.

POLYMERISATION OF CYANIC ACID.

A. Senier and T. Walsh state that cyamelide is not the only product in the polymerisation of liquid cyanic acid, the two isomerides, cyamelide and cyanuric acid, being also formed. The isomerides can be separated by treatment with water. Pure cyamelide so obtained is soluble in water to the extent of 0·01 per cent. at 15°. The solubility of cyanuric acid at 15° is from 0·145 to 0·16 per cent. Phosphorus pentachloride has no action on cyamelide.—*Proc. Chem. Soc.*, **18**, 13.

RESERVE CARBOHYDRATES.

In the endosperm of the seeds of several species of Liliaceæ, G. Dubat (*Comptes rendus*, **133**, 942), finds reducing sugars derived from the reserve carbohydrates, which are composed of saccharose, mannanes, dextranes, and a small quantity of pentasanes. These were found especially in *Ruscus aculeatus.* In the seed of *Aucuba japonica*, G. Champenois (*Tom. cit.*, p. 885) notes the presence of a large proportion of cane-sugar, accompanied by a glucoside. In addition to these, the horny endosperm contains a galactane, a mannane, and a pentane; also a mannose and a pentose, probably arabinose.

ACTION OF NITRIC ACID ON METALS.

A. J. Ewart calls attention to the influence of temperature on the action of nitric acid on metals, and shows that under certain conditions of temperature, and dilution of the acid, hydrogen is produced. This, he points out, is in striking contrast to the commonly occurring statement in text-books that under no circumstances can hydrogen be obtained by the action of nitric acid on metals. If magnesium be added to cold dilute nitric acid ($\frac{1}{6} - \frac{1}{8}$), an active evolution of nearly pure hydrogen takes place at first, although as the solution becomes warm and the percentage of magnesium nitrate increases, the production of hydrogen rapidly diminishes. At low temperatures (below −10° C.), strong nitric acid is without action on metals (copper, zinc, magnesium), but if the temperature is allowed to rise slowly little or no action occurs until a certain point is reached, when a sudden and violent reaction takes place, the temperature rising abruptly. The critical point for this violent reaction varies with different metals; in the case of zinc it lies between 0° C. and 2° C., magnesium between 17° C. and 19° C., and copper between 19° C. and 21° C.—*Nature*, **65**, 128.

CRYSTALLOIDS IN PLANTS.

Dr. H. Kraemer defines spherocrystals as spherical aggregates of crystals with sharp angular contours, which are made up of but one substance, the molecule of which is not very complex; they include carbon compounds as well as inorganic substances. Some of these substances—glucosides, salts of the alkaloids, amygdalin, etc.—are soluble in water; whilst others—calcium phosphate and oxalate, the alkaloids, such as strychnine, berberine, etc.—are insoluble. Spherites are distinguished from spherocrystals by having a more complex constitution, and by the individual crystals having a somewhat rounded outline, or being imbedded in colloidal substances. Some of these—hesperidin, inulin, and other carbohydrates—are also soluble, while others are insoluble—starch, and the fundamental substances entering into the composition of the cell-wall. In the cell-wall the crystalloids occur in very close radial and tangential rows, and constitute by far the greater proportion of the wall. In starch-grains, on the other hand, there is apparently a greater preponderance of colloidal matter which takes up certain stains. The structure, as well as the mode of formation, appear to be the same in spherites and in spherocrystals.—*Proc. Acad. Nat. Sci., Philadelphia*, 1901, 450.

BEE-KEEPING.*

BY SAMUEL T. FROST.

In introducing the subject of bee-keeping this evening, my purpose is not to give a treatise on the products of the bee—*Apis mellifica*—viz., honey and beeswax, which are of some importance in pharmacy, but rather to direct attention to bee-keeping as an interesting hobby for chemists. Someone may ask, however, "Of what interest is bee-keeping to chemists' assistants in London?" Well, it may be that the assistants now in London will one day be the owners of pharmacies in the provinces, but even if such should not be the case, a country residence is not a *sine quâ non* to success in bee-keeping. The rapidity and power of flight of the bee and its strongly developed homing instinct render a distance of a few miles of little account, consequently bees may be, and are being, kept in London, with its extensive parks and commons and numerous lime trees. Of course, close proximity to pasture land or to large tracts of heather is an advantage, but it is not indispensable.

I have known of bees being kept in an outhouse behind a place of business in the heart of a town, with little or no annoyance to anyone, the hive being placed at such a height that the bees could leave and enter without coming into contact with persons passing. Bees have also been kept in glass hives inside an ordinary dwelling-house, the bee-keeper being thus able to study their habits conveniently; and if the Porter bee-escape is used to clear the supers no inconvenience is experienced by keeping bees under such conditions.

However, it may be assumed that the chemist who takes up bee-keeping as a hobby is in possession of a garden. And here it may be stated that some of the most successful bee-keepers have been professional men having a taste for natural history, for one of the advantages of bee-keeping is that during the daytime the bees require little or no attention, except in the swarming season, an hour or so in the early morning and again in the evening being all that is required.

The various operations connected with bee-keeping are very interesting. There is, of course, the risk of being stung, but the careful bee-keeper is stung very seldom. Still, the precaution should always be taken to protect the face with a bee-veil, which is worn over a broad-brimmed hat and tucked under the coat. Gloves may be worn on the hands, but they are more trouble than they are worth, because bees rarely attack the hands unless made angry by a sudden jar. In fact, many bee-keepers prefer to work without a coat, and with their shirt-sleeves rolled up. For if a coat is worn there is always the danger of a bee crawling up the sleeve, hence it is usually fastened at the wrist; but in warm weather this is uncomfortable.

Modern bee-keeping differs considerably from the old style of keeping bees in the bell-shaped straw skep, generally shown in the nursery picture-books. The "scientific" bee-keeper uses "bar-framed" hives, the essential difference between the two systems being that, whereas bees kept in straw skeps swarm several times during the honey season, by the new system the bees can be prevented from swarming, and are thereby enabled to produce much more honey. For if swarming is allowed, the bees are divided into so many stocks that they cannot gather the amount of honey that would have been possible had they all remained in one hive.

A "bar-frame" hive is made of wood, and may be of one, two, three, four, or more stories in height, according to the character of the honey-season and the strength of the colony of bees. The hive can be bought ready-made, complete with all accessories, or if the bee-keeper has any skill with carpenters' tools he can make the boxes and outside-covers in his spare time. He may also make the bar-frames to hold the honeycomb if he choose to do so, but it is cheaper to buy the different parts of the frames ready-cut and fit them together himself. The inside dimensions of a hive—or body-box—to hold ten frames is $17\frac{1}{16}$ inches across where the top bar rests, and the body of the hive taking the frame is $14\frac{1}{2}$ inches by $15\frac{1}{2}$ inches in breadth, and 9 inches in depth; the board for the front side, however, is only $8\frac{1}{2}$ inches deep, $\frac{1}{2}$-inch space being left at the bottom to form a doorway. Each frame is 17 inches long by $8\frac{1}{2}$ inches deep; the top bar of the frame is about an inch wide, and has a slit cut on the under-side through the middle, longitudinally, to within about an inch and a half of each end; into the slit is fixed a sheet of "comb-foundation"—a thin sheet of beeswax passed between special rollers to give it the impression of honey-cells; and at each end of the bar a "metal-end" is placed, which serves the double purpose of keeping the bars an equal distance apart and preventing the bar from splitting.

When a colony of bees is placed in a bar-frame hive fitted with "foundation," the "worker" bees, after settling down, immediately begin to "pull out" the foundation into the form of honeycomb, and, if the honey-season is in full swing, commence to deposit honey in the cells, while the queen-bee begins to lay the eggs which subsequently become "workers"—undeveloped females—"drones"—male bees—and queens, as the case may be. The time required for the development of a worker-bee is twenty-one days; for drones, twenty-four days; for queens, sixteen days. The rapid development of the larvæ destined to be queens is due to a special food which is given exclusively to them, and is stated to be more rich in proteid matter.

Only one queen is allowed in a hive, but she is extremely prolific; thus, in the course of a few weeks the body-box, or brood-chamber, becomes overcrowded, and if honey is being brought in briskly the bees, having a few queen-cells with queens near hatching, decide to divide or "swarm." All being ready, the old queen leaves the hive, followed by about three-fourths of the bees in the hive. A few weeks later a second swarm may be thrown off, and sometimes even a third swarm will leave the hive. The bee-keeper who desires to increase the number of his stocks allows the bees to swarm, but the bee-keeper who has a full complement of colonies, and whose object is honey, does his best to prevent swarming, because one strong colony will gather more honey than several weak stocks.

The desire to swarm is natural to bees, but as a rule they swarm only when overcrowded. Hence, when the bee-keeper perceives that the hive is packed with bees, he gives them more room by placing a "super" over the brood-chamber—that is, a box, which may be of the same size as the body-box except that its sides are all equal in depth, there being no necessity for a doorway, as there is one already in the bottom box, or it may be a "shallow" box—six inches deep—containing shallow frames. The super is filled with frames and foundation, or, it may be, drawn-out combs saved from the previous year, and, inasmuch as it is intended as a storehouse for honey, a piece of zinc—perforated with numerous holes in such a manner that a worker-bee can pass through, but the queen and the drones, being larger, cannot—is placed between the two boxes. Thus, all breeding is confined to the lower box. Bees do not like a draught; therefore, unless the bee-keeper does it for them, they set to work to fill up the crevices around the edge where the super rests upon the body-box with a sticky green-coloured substance called propolis, which is gathered from the bark of trees. But, as time is valuable, the bee-keeper usually saves the bees that trouble by pasting a strip of paper over the cracks.

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* Read before the Chemists' Assistants' Association, London, on Thursday, January 16, 1902.

During a good honey-season, particularly if the super contained old combs and not comb-foundation, within a week or a fortnight still more room will be required, and a second super is put on, and very often a third, or even a fourth, super is necessary. Care has to be taken, however, in building up a hive in this way that it stands firmly, and is not likely to be blown over by the first strong wind.

In regard to the quantity of honey which may be gathered by one colony of bees, I have assisted in taking from one hive 1 cwt. 14 lbs. of honey, and I have heard of others from which even more has been taken. Each deep super is capable of holding about sixty pounds of honey, while a shallow super will hold about thirty. Thus, if a strong colony requires and fills four or five supers, as is often the case in a good season, it will be understood that the quantity mentioned is not an exaggeration. That quantity could not be gathered, however, if swarming were allowed; therefore should the bees swarm in spite of the supers, the bee-keeper, having captured the swarm, simply puts the bees back where they came from. While the bees are settling in a temporary hive he stretches a sheet horizontally across the front of the hive from which the swarm issued, allowing it to bag somewhat, but not sufficient to touch the ground. Then, just before dusk, when the bees have settled comfortably for the night, he takes the hive containing the swarm, and by a sharp jerk throws the whole of the bees upon the sheet. For a few moments all is confusion, the bees running about in all directions, very few attempting to fly, however, but by means of the "smoker"—the bee-keeper's chief weapon of offence and defence—their heads are soon all turned towards the mouth of the hive, and it is then a most interesting sight to watch the great mass of bees marching into the hive. To prevent a recurrence of the swarm the bee-keeper sometimes opens the hive before putting the bees back, and cuts out all the queen cells, this being a sure preventive. But if it is desired to have a young queen in the hive, he and his assistant take up a position on either side of the sheet, close to the entrance, and keep a sharp look-out for the queen, and, on sighting her, she is at once picked out and destroyed, or, if it is desired to keep her, she is placed in a "queen cage." Should she elude the watchers and enter the hive, the bees may swarm again. As a rule, however, a fight occurs between the old and the young queens, and when one of them is dead, and the other queen cells torn down, the bees settle down to work as though nothing had happened.

(To be concluded.)

PROFIT—A NATURAL RIGHT.*

No person endowed with reasonable common sense will deny that a man in trade—be his dealings limited or extensive—is entitled to a fair and just margin of profit. Without striving for exact definitions it may be said in general that a safe margin should cover the following items or their equivalents:—

(1) A fair remuneration to himself for his own services rendered in the transaction of the business. Such services are certainly entitled to the same rewards as would be his were he manager of the same concern, but in the employ of others.

(2) An additional amount sufficient to cover an average rate of interest upon the capital invested in the business.

(3) The means wherewith to cover all reasonable expenses of carrying on his enterprise.

(4) He should also realise enough to provide for uncalculated expenses, such as may be occasioned by flood or fire, by unavoidable bad debts or depreciation of values.

(5) He is furthermore entitled to equity, to an extra amount from year to year enabling him, after years of hard and efficient service, to enjoy in confidence the fruit of his labour.

The oft-heard expression of the merchant to the effect that he is "making a living" is without excuse. The necessity for its utterance indexes a condition in itself an injustice to the man himself, to his family and dependents, and especially to the industry he represents.

THE PREPARATION OF COMPRESSED TABLETS.

BY AN ORDINARY PHARMACIST.

(Concluded from page 66.)

Insoluble Substances.—Add 10 per cent. of powdered sugar for granulation, and use water for moistening, as in the case of acetanilide.

Iron (Saccharated Carbonate).—Moisten with water, pass through a No. 20 sieve, dry, again pass through the sieve, and lubricate with ether-paraffin solution.

Iron (Saccharated Iodide).—Proceed as in the case of the saccharated carbonate.

Iron (Saccharated Oxide).—Proceed as in the case of the saccharated carbonate.

Iron Phosphate, Quinine, and Strychnine.—Mix thoroughly, iron phosphate, 200 gr.; quinine sulphate, 100 gr.; strychnine, 1⅔ gr.; powdered sugar, 25 gr. Moisten the mixture with water, then granulate and lubricate as in the case of acetanilide. Make 100 tablets.

Iron, Quinine, and Zinc Valerianates.—Mix finely powdered iron, quinine, and zinc valerianates, each 50 gr.; powdered sugar, 50 gr.; and powdered gum acacia, 20 gr. Moisten with water, granulate as in the case of acetanilide, lubricate with ether-paraffin solution and a small quantity of French chalk, and make 100 tablets.

Lead (Compound).—Mix lead and zinc acetates, each 200 gr., dry thoroughly by the aid of heat, then reduce to fine powder and add hydrastine hydrochloride, 5 gr., morphine acetate, 3 gr.; powdered sugar, 40 gr. Moisten with water, pass through a No. 20 sieve, dry, and make 100 tablets.

Liquorice Powder (Compound).—Use a very fine powder and proceed as in the case of Dover's powder.

Lithium Citrate.—(1) Mix dry powdered citric acid, 480 gr., with powdered sugar, 76 gr., moisten with water, pass through a No. 20 sieve, and dry thoroughly. Then mix dried sodium bicarbonate, 304 gr., with lithium carbonate, 106 gr., and powdered sugar, 200 gr., moisten with water, granulate as before, and dry. Next, mix the two lots of granules, again pass through the sieve and make 100 tablets. (2) Dry and mix thoroughly lithium citrate, 300 gr.; sodium bicarbonate, 302 gr.; tartaric acid, 275 gr.; and powdered sugar, 275 gr. Moisten with 70 per cent. alcohol, rub through a No. 20 sieve, dry thoroughly, and make 100 tablets.

Manganese Dioxide.—Mix thoroughly, finely powdered manganese dioxide, 100 gr.; powdered sugar, 50 gr.; and powdered gum acacia, 10 gr. Moisten with water, granulate as in the case of acetanilide, and lubricate with paraffin if necessary. Make 100 tablets.

Mercuric Chloride.—Proceed as in the case of aloin. Care must be taken to avoid contact of the mercuric chloride with metal dies

Mercuric Iodide.—Proceed as in the case of aloin and other potent remedies.

Mercurous Iodide.—Proceed as in the case of aloin and other potent remedies.

Morphine.—Proceed as in the case of aloin and other potent remedies.

Morphine Acetate.—See lead (compound) tablets, of which this salt constitutes an ingredient.

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* From the *Keystone*, through the *Canadian Druggist*.

Morphine Sulphate.—Mix morphine sulphate, 25 gr., with powdered sugar, 50 gr., moisten the mixture with 80 per cent. alcohol, then dry, lubricate with 1 to 2 per cent. of powdered boric acid, and make 100 tablets. See also alum (compound) tablets and neuralgic tablets.

Myrrh and Aloes.—See note on aloes and myrrh tablets.

Neuralgic.—Mix quinine sulphate, 50 gr.; morphine sulphate, 1¼ gr.; strychnine sulphate, 5/6 gr.; arsenious acid, 1¼ gr.; powdered extract of aconite, 12½ gr.; powdered sugar, 20 gr.; and powdered sugar of milk, 100 gr. Moisten with water, granulate and lubricate as in the case of acetanilide, and make 100 tablets.

Nux Vomica (Extract).—Proceed as in the case of aloin, after rubbing smooth with alcohol and adding a little powdered starch to absorb the excess of liquid.

Opium.—Reduce to very fine powder, and proceed as in the case of aloin. See also note on brown mixture tablets.

Pepsin.—(1) If powdered pepsin be used, add 10 per cent. of powdered sugar, spray the mixture with 50 per cent. alcohol, mix thoroughly and pass through a No. 80 sieve, then dry and compress. (2) Mix powdered pepsin with four times its weight of powdered sugar of milk, moisten with 70 per cent. alcohol, granulate as in the case of acetanilide, and lubricate with French chalk. (3) Reduce scale pepsin to No. 30 or 40 powder, and lubricate with French chalk before compressing.

Pepsin and Bismuth.—See note on bismuth subnitrate and pepsin tablets.

Phenacetin.—Proceed as in the case of acetanilide and antipyrine.

Phenacetin and Salol.—(1) Mix equal weights of phenacetin and salol, in fine powder, and proceed as in the case of acetanilide and salol. (2) To the mixture of phenacetin and salol add 5 to 10 per cent. of powdered starch, then moisten the mixture with 70 per cent. alcohol, pass through a No. 20 sieve, warm the granules slightly, dry, and compress.

Podophyllin.—Proceed as in the case of aloin and other potent remedies.

Potassium Bitartrate and Sulphur.—Mix equal weights of potassium bitartrate and sulphur, and add to the mixture 5 per cent. by weight each of powdered sugar and powdered gum acacia. Moisten with water, granulate as in the case of acetanilide, and compress without using any lubricant.

Potassium Bromide.—Reduce to a finely granular condition, and compress without further preparation.

Potassium Chlorate.—Proceed as in the case of potassium bromide.

Potassium Chlorate and Ammonium Chloride.—See note on ammonium chloride and potassium chlorate tablets.

Potassium Iodide.—Proceed as in the case of potassium bromide.

Potassium Permanganate.—Reduce to a finely granular condition and pass through a No. 20 sieve before compression, as in the case of monobromated camphor.

Quinine Bisulphate.—Lubricate with ether-paraffin solution, dry, add 2 per cent. of powdered French chalk if necessary, and compress.

Quinine Sulphate.—(1) Proceed as in the case of the first method for charcoal, but use a little ether-paraffin solution or finely powdered starch as a lubricant, if the tablets are required to disintegrate very readily. (2) Proceed as in the case of acetanilide. See also iron phosphate, quinine, and strychnine tablets, and neuralgic tablets.

Quinine Tannate and Chocolate.—Mix quinine tannate, 100 gr., powdered chocolate, 300 gr., saccharin, 10 gr., and powdered sugar, 100 gr. Moisten with water, granulate as in the case of acetanilide, and lubricate with ether-paraffin solution if necessary. The saccharin is sometimes omitted.

Quinine Valerianate.—See note on iron, quinine, and strychnine valerianates.

Rhubarb and Magnesia.—Mix powdered rhubarb, 200 gr., with powdered sugar, 25 gr., add oil of peppermint, 15 drops, moisten the mixture with liquid glucose diluted with three times its volume of water, pass it through a No. 20 sieve, and dry. Then mix magnesium oxide or carbonate, 200 gr., with powdered sugar, 25 gr., and powdered gum acacia, 50 gr., moisten the mixture with water, pass it through a No. 20 sieve, and dry. Next, mix the two lots of granules and rub to fine powder in a mortar, moisten with 70 per cent. alcohol, again pass through the sieve, dry, and make 100 tablets.

Rhubarb and Soda.—Proceed as in the case of rhubarb and magnesia, substituting sodium bicarbonate for the magnesium compound. The rhubarb is granulated separately, in order to prevent it being acted on by the alkali. A mixture of liquid glucose, 1, water, 1, and alcohol, 3, may be used for moistening the rhubarb instead of the simple mixture of glucose and water.

Salicin.—Proceed as in the case of acetanilide, antipyrine, and phenacetin.

Salicylic Acid.—Proceed as in the case of charcoal or quinine sulphate.

Salol.—Proceed as in the case of acetanilide, adding 5 to 10 per cent. of finely powdered starch to facilitate disintegration.

Salol and Acetanilide.—See note on acetanilide and salol tablets.

Salol and Phenacetin.—See note on phenacetin and salol tablets.

Santonin and Calomel.—See note on calomel and santonin tablets.

Santonin and Chocolate.—Mix powdered santonin and chocolate, each 100 gr., with powdered sugar, 300 gr., moisten with water, and proceed as in the case of acetanilide. Make 100 tablets.

Salts (Hydrated).—Reduce the crystals to fine powder, and proceed as in the case of alum. Or, the salts may be thoroughly dried before mixing with the other ingredients, as in the case of alum (compound) tablets

Scale Preparations.—Reduce to No. 30 or 40 powder, lubricate with French chalk, and compress.

Soda and Rhubarb.—See previous note on rhubarb and soda tablets.

Soda Mint.—(1) Mix sodium carbonate, 400 gr.; powdered gum acacia, 45 gr., and oil of peppermint, 16 drops. Moisten with water, and proceed as in the case of acetanilide. The oil of peppermint is sometimes added after the other ingredients have been granulated and dried, being dissolved in 90 per cent. alcohol and sprayed upon the material, which must then be again dried before compressing. Make 100 tablets. (2) Mix sodium bicarbonate, 400 gr.; powdered gum acacia, 25 gr.; ammonium carbonate, 8 gr., and oil of peppermint, 15 drops. Moisten with 50 per cent. alcohol, pass through a No. 20 sieve, then dry and compress.

Sodium Bicarbonate.—Add 5 per cent. of powdered gum acacia, moisten with water, and proceed as in the case of acetanilide, but omitting the lubricant.

Sodium Salicylate.—Add 5 per cent. of powdered gum acacia, moisten with 50 per cent. alcohol, pass through a No. 20 sieve, dry, and compress. Solution of gelatin may be used instead of the gum, but in that case a little French chalk must be added before compression.

Strychnine.—Proceed as in the case of aloin. See also notes on aloin, belladonna, and strychnine tablets, and iron phosphate, quinine, and strychnine tablets.

STRYCHNINE SULPHATE.—See note on neuralgic tablets, of which strychnine sulphate constitutes an ingredient.

SULPHONAL.—Proceed as in the case of acetanilide, adding 5 to 10 per cent. of finely powdered starch to facilitate disintegration.

SULPHUR AND CREAM OF TARTAR.—See note on potassium bitartrate and sulphur tablets.

TARTAR EMETIC.—See note on brown mixture tablets, of which tartar emetic constitutes an ingredient.

THROAT AND VOICE.—Proceed as in the case of bronchial tablets, adding ammonium chloride, 300 gr., to the other ingredients, and making 130 tablets instead of 100. No lubricant need be used.

TINCTURES.—Proceed as in the case of liquid extracts, or use equivalent quantities of the latter instead of the tinctures.

TRIONAL.—Proceed as in the case of acetanilide, adding 5 to 10 per cent. of finely powdered starch to facilitate disintegration.

VOICE.—See preceding formulæ for bronchial tablets and throat and voice tablets.

ZINC ACETATE.—See note on lead (compound) tablets, of which zinc acetate constitutes an ingredient.

ZINC SULPHATE.—Proceed as in the case of alum. See also note on alum (compound) tablets.

ZINC VALERIANATE.—See note on iron, quinine, and zinc valerianates.

CALCIUM PHOSPHATE, ITS COMPOSITION AND IMPURITIES.*

BY R. C. COWLEY AND J. P. CATFORD.

During our recent and still pending work on phosphates, we have had reason to question the purity of an article sold as pure calcium phosphate. In the 1885 Pharmacopœia there were explicit directions given for preparing this salt from bone ash, and also its chemical formula.

The 1898 edition omits the formula, and suggests alternative methods for preparing it. The first process is identical with that of the 1885 edition, and yields a product which conforms to the official characters and tests.

The alternative process is "by the interaction of calcium chloride and sodium phosphate." This has been quoted word by word (as the process almost exclusively adopted in preparing the official article) by the editor and reporter on the Pharmacopœia, in his 'Digest of Researches and Criticism,' a work that would be more useful if brought up to date. Has there been nothing "digestible" since December, 1898? Commentators on the Pharmacopœia—including Messrs. White and Humphrey, in their recently-published 'Pharmacopedia'—have assumed that the sodium phosphate mentioned is di-sodium-hydrogen-phosphate, and they have concluded that there are two calcic phosphates official, viz., tri-calcic phosphate, Ca_32PO_4, and di-calcic phosphate, $CaHPO_4$; but the commentators referred to above have quite overlooked the fact that this di-calcic phosphate does not conform to the characters and tests as required, instead of which it is a crystalline precipitate which under the microscope is seen to be thin rhombic plates or prisms. Moreover, a sample of the di-calcic phosphate ($CaHPO_42H_2O$), dissolved in dilute HCl, and precipitated as tri-calcic phosphate by solution of ammonia as directed, showed a loss of over 29 per cent., as only two-thirds of the phosphoric acid is precipitated, whilst the loss allowed by the Pharmacopœia is not more than 5 per cent.

An alternative reading of the pharmacopœial monograph, however, suggests itself, since the materials referred to as sources of official compounds are frequently not official, for instance, "bone ash" in the paragraph now under consideration. Hence by "sodium phosphate" in this connection, "tri-sodic phosphate" may have been intended, and then the product would correspond to the official characters and tests.

One of these tests is worthy of remark. We are told that the solution of amorphous phosphate in dilute hydrochloric or nitric acid continues clear when dilute sodium acetate is added in excess, proving the "absence of calcium oxalate." Is this a slip for "alumina"?

It does not appear clear to us how calcium "oxalate" could occur as an impurity in phosphate unless subsequently added. The production of a precipitate by ammonium oxalate is mentioned among the 1885 tests.

The sample labelled "Pure Calcium Phosphate" previously referred to, when examined by the sodium acetate test (a normal solution of that salt with acetic acid was used), gave a precipitate which proved to be calcium sulphate, and was present to the extent of 0·5 per cent. This would lead us to the assumption that the preparation was made from calcium phosphate that had been treated with sulphuric acid, forming superphosphate or mono-calcic phosphate, $CaH_4(PO_4)_2$, and calcium sulphate. On adding solution of ammonia to the solution of this mixture a precipitate containing di- and tri-calcic phosphates with sulphate would be produced. A microscopic examination of the substance revealed the presence of all three. Traces of iron were also present. Possibly it would also show small quantities of arsenic if specially looked for.

We should like to draw the attention of chemist and pharmacist to the utility of the microscope in examining precipitates; in the case under consideration the presence of calcium sulphate and of di-sodium phosphate are readily detected by this means.

We are indebted to Mr. F. Peacock, working in the laboratory of the Liverpool School of Pharmacy for the quantitative determination of the calcium sulphate.

ICHTHYOL IN SOLUTION.

BY F. A. UPSHER SMITH.

In a recent note on ichthyol* Mr. David Harley draws attention to the miscibility of ichthyol with water. As he points out, this fact is not generally known. He points out, also, that potassium bromide causes the formation of a turbid, brown precipitate which eventually produces a sticky mass. There appeared last year, in the *Pharmaceutical Journal* [4], **12,** p. 701, an abstract of a paper in the *Revue Méd. Pharm.*, wherein it was stated that ichthyol should not be prescribed with alcohol; acids decompose it; alkaline hydrates and carbonates set free ammonia.

As it is desirable that our knowledge of the incompatibilities of drugs should be extended, I have thought it well to place on record a few simple experiments that I set on in June, 1900, with the object of finding out whether ichthyol was easily dispensed in the form of mixtures. Ammonium ichthyol or ammonium sulpho-ichthyolate was taken and mixed with water in the proportion of 1 drachm in 1½ fluid ounces. The resulting brown solution was bright and was apparently unaltered after being kept for a year. To other solutions so prepared were added in one case 1 fluid drachm of dilute hydrochloric acid, and in another case 1 fluid drachm of aromatic spirit of ammonia. The acid solution formed a greenish, resinous film on the bottle after a few hours; ultimately, all the colouring matter was precipitated as a black precipitate, leaving a perfectly clear solution devoid of the characteristic odour of ichthyol. The alkaline solution threw down a slight film after a week, the dark reddish-brown precipitate gradually increasing in quantity, with the result that the supernatant liquid became yellow in colour; in this case, also, the odour of ichthyol disappeared. The precipitates from acid and alkaline solutions were both immiscible with the supernatant liquids.

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* Read before the Liverpool Chemists' Association, on January 23, 1902.

* *Pharmaceutical Journal*, January 25, 1902, p. 63.

The conclusion to be drawn from these experiments is that ichthyol should only be prescribed in neutral aqueous solutions, which keep well for many months, whereas ichthyol is decomposed in acid or alkaline solution.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

Salicylic Acid in Orange Wine.

At Dudley Police Court, on January 24, before Messrs. E. Grainger (Deputy-Mayor), H. Bridgwater and H. G. Walker, John Wilkinson, confectioner, 104, Hall Street, Dudley, was charged with selling orange wine containing ten grains per pint of salicylic acid.

Dr. J. H. Wilkinson, Medical Officer of Health, said the continued use of such wine would be injurious to health, but acknowledged, in cross-examination, that he had never come across any case of illness caused by salicylic acid.

Mr. Rose Innes, K.C., who appeared for the defence, described the case as one of extreme importance to all concerned, and said the question was whether the quantity of salicylic acid mentioned by the analysis was actually there. He called

Dr. B. H. Paul, who said a sample of the wine examined by him contained only two grains per pint of salicylic acid.

Mr. Gordon Salomon, Dr. Luff and other expert witnesses were also called for the defence and, ultimately, the magistrates dismissed the case.

Compound Tincture of Camphor.

At Bow Street Police Court, on January 24, before Mr. Fenwick, Mr A. Spink, 134, Theobald's Road, London, W.C., was summoned for selling compound tincture of camphor said to be deficient in alcoholic strength to the extent of at least 18·10 per cent.

Mr. H. C. Jones prosecuted on behalf of the Holborn Borough Council, and Mr. C. H. Kirby (solicitor to the C.D.A.) defended.

Mr. Jones said there were two summons, one for liniment of soap and the present one. The former summons had been adjourned at the request of the defendant, and he asked leave to withdraw the summons in the case of the paregoric elixir. He had just discovered that a mistake had been made in the analyst's certificate, which stated that paregoric elixir, if prepared in accordance with the British Pharmacopœia, should contain at least 60 per cent. of alcohol. This, should, however, have read "should be made with 60 per cent. alcohol."

Mr. Kirby asked for the costs of the defendant.

Mr. Fenwick: I do not think I can allow you that; the summons is withdrawn, and you must be satisfied with that.

Camphorated Oil.

At Bow Street Police Court, on January 24, before Mr. Fenwick, Mr. H. Jenkins, 73, Red Lion Street, W.C., was summoned for selling camphorated oil alleged to be 76 per cent. deficient in camphor and to contain 90·7 per cent. of mineral oil.

Mr. H. C. Jones prosecuted, and the defendant conducted his own defence.

Mr. S. Larard, Food and Drugs Acts Inspector, said on December 18 he went to the shop of defendant, who served him and asked for four ounces of camphorated oil, for which he paid 7d. When he said that it was purchased for the purposes of analysis, defendant said: "Give it me back; it is not camphorated oil at all."

In reply to the magistrate, Mr. Jenkins said he had no questions to ask and no witnesses.

Mr. Fenwick: Now is your time to tell me anything you have to say in your defence.

Mr. Jenkins stated that witness had not said what was untrue, but the occurrence hardly took place as he described. The point he would put forward was that the B.P. said camphorated oil should contain one ounce of camphor and four ounces of olive oil. The Inspector said he paid 7d., but he only paid 5d., and 1d. each for two bottles.

The Magistrate: What did he ask you for?

Mr. Jenkins: Four ounces camphorated oil.

Mr. Jenkins, continuing, said that witness must have known he was getting a cheaper oil, and it was not labelled camphorated oil. He kept the B.P. oil, but many would not pay for that. He kept two sorts, and if what he had sold the Inspector had been labelled it would have been labelled "Embrocation" (as bottle produced). No one could expect an ounce of camphor and four ounces of olive oil for 5d.

The magistrate imposed a fine of £3 and 12s. 6d. costs.

Soap Liniment.

At the North London Police Court, on January 24, the case of Parke's Drug Stores, Limited, charged with selling, at 251, Upper Street, N., liniment of soap which contained methylated spirit, came on for final hearing before Mr. d'Eyncourt.

Mr. Bramall prosecuted for the Islington Borough Council, and Mr. F. W. Beck appeared for the defendants.

Mr. Beck intimated his intention to produce evidence as to a commercial standard outside the Pharmacopœia for liniment of soap, but Mr. d'Eyncourt said he must decline to hear this evidence.

Mr. Beck contended that he was entitled to call this evidence, because the B.P. was only a *primâ facie* standard, and that a purchaser was not necessarily prejudiced because he did not get the B.P. article. It was quite clear that the Pharmacopœia was not a standard for everything it contained.

Mr. Bramall: But this is a drug.

The Magistrate: Quite so.

Mr. Beck, continuing, said that, admitting the Pharmacopœia was a standard for drugs—for medical men—there was often a different commercial standard for domestic remedies not prescribed by medical men.

Mr. d'Eyncourt said he had thought a good deal about the case, but could not admit this evidence. The law was clear on this point. Many things in the Pharmacopœia were on the borderland, and in some cases it was perhaps very hard on the pharmacist. The fact that some of these remedies were not sold under a physician's order showed that they should be very carefully prepared.

It had been admitted previously by both sides that the woman who made this purchase was charged 1s. 1d., but it was doubtful whether she received 4 oz. or 6 oz. of the liniment.

Mr. A. G. Junor, who sold the liniment, now stated that he supplied her with 6 oz.

Mr. Bramall cross-examined the witness at some length. He stated that they kept both liniments in stock. The rectified was sold at 4d. an ounce. He only sold this when ordered by physicians. Rectified spirit was about eight times as dear as the methylated.

Mr. Beck said the other evidence he had proposed calling was that of chemists in business as to the existence of a commercial standard for soap liniment, apart from the Pharmacopœia, and that soap liniment was a well-known domestic remedy.

The Magistrate: I exclude that.

Mr. Beck: I wish to put in as evidence the Inland Revenue permit to use methylated spirit in soap liniment.

The Magistrate: I think you may do that.

Asked by Mr. Beck whether he would state a case, the magistrate said he had considered the points raised, and did not see that he could grant a case. The Pharmacy Act seemed to do away with any question of a commercial standard. It might be unfair, but the law was there, and there was no room to grant a case. Mr. Beck could get a mandamus, which would be more satisfactory to him (Mr. Beck).

Mr. d'Eyncourt then delivered a lengthy judgment, in the course of which he said that he had heard evidence as to prejudice, although he had great doubts as to whether he should have heard it. Under the Pharmacy Act, a chemist was clearly bound by the Pharmacopœia. There might be instances in which a purchaser was not prejudiced by getting something else, but in this case there was nothing of the kind. It was not for him to say whether the purchaser was injured sufficient to prejudice him by the smell alone. Then there was the question of price. The last witness had said that he sold very little of the rectified liniment, and it was quite evident a larger profit was made on the methylated. Although sold at twice the price, the rectified liniment was much dearer than the methylated, and he should like to recall statements in the evidence of the medical men who, when asked whether it would be safe to let chemists sell drugs not compounded according to the Pharmacopœia, all said that it would not be safe. He had, therefore, no hesitation in saying that the sale was to the prejudice of the purchaser, and, as this was a large matter, he must make it the full penalty of £20.

Mr. Bramall urged that, as there were three previous convictions against the defendants, the penalty should be increased.

The Magistrate: I shall not make it more than £20 and 10 guineas costs.

Cream of Tartar.

At the Dundee Sheriff Court, on January 23, before Sheriff Lee, Alexander Bell, manager of the West Town End Association, Limited, Forfar, was charged with having on December 10 last sold, to the prejudice of Mr. James Stirling, Sanitary Inspector of the Burgh, half a pound or thereby of cream of tartar not of the nature, substance, and quality of the article demanded. The analytical report of Mr. J. D. Macdougald showed that he was of opinion that the sample was not genuine cream of tartar, but was cream of tartar adulterated with not less than 30 per cent. of stucco and 20 per cent. of starch.

Mr. J. S. Gordon, who appeared on Bell's behalf, admitted the offence, but stated that Mr. Stirling went to the shop for cream of tartar, and got cream powder. Cream of tartar and cream powder were kept side by side in the store. Cream powder was not and had never been retailed by the Association, but the lad in the shop had by mistake filled up the retail drawer used for cream of tartar with cream powder, hence the mistake. Immediately the mishap was discovered the Association had discontinued using cream powder.

The Sheriff remarked that the analysis read very much like a recipe he had seen in use for killing rats.

Mr. Alexander Freeman, Procurator-Fiscal, said he believed that the whole affair had arisen from a mistake. The stucco was an insoluble kind of material, and would likely in the course of time make plaster of Paris in a person's inside.

The Sheriff thought that the case was more due to carelessness than intention to defraud, but the public must be protected, and he imposed a fine of £2, with the alternative of five days' imprisonment.

Tartaric Acid in Self-raising Flour.

At Dudley Police Court, on January 22, before Dr. T. F. Higgs and Mr. G. Bean, Alfred Edward Hughes and Daniel Barchall, Southall's Lane, were charged with selling as self-raising flour a mixture containing 63 grains per pound of tartaric acid and 26½ grains per pound of sodium bicarbonate, together with a considerable admixture of potato starch.

Medical and other evidence was given to show that the proportion of tartaric acid was excessive and likely to endanger health, but

Mr. F. W. Green, who appeared for the defendants, argued that the analyst's certificate was bad, inasmuch as it did not specify the proportions of the whole of the ingredients of the sample. He said defendants had really used cream of tartar, and that if the analyst had tested the sample for the presence of potash it would have been found that the quantity of acid was not excessive. He could also prove that there was no potato starch in the mixture.

Mr. E. W. T. Jones, Public Analyst for Wolverhampton and other local towns, stated that in good self-raising flour the chemical constituents were 23 grains per pound of tartaric acid, or 46 of cream of tartar, and 46 grains of sodium carbonate. In the sample furnished him by Mr. Green he found 25·2 grains per pound of sodium carbonate and 47 grains of cream of tartar. There was very little indication of free tartaric acid.

In view of the difference of opinion between the professional experts, the Bench decided that a sample should be sent to Somerset House, and adjourned the case.

Mercury Ointment.

At the Mansion House Police Court, on January 27, before Alderman Sir Horatio Davies, Messrs. Hy. Lamplough, Limited, were summoned for selling, at 134, Cheapside, E.C., 3 oz. of mercury ointment deficient to the extent of 70 per cent. of the required quantity of mercury.

Mr. Vickery prosecuted on behalf of the City Council, and Mr. Beck (solicitor to the C.D.A.) defended.

Mr. W. H. May, the Inspector, said that on December 13 last he took a written order for "Ung. hydrarg. ℥iii." He was served by Mr. J. F. Quin.

Cross-examined by Mr. Beck: After he received the articles and paid for them he declared that they were for the purpose of analysis, and Quin then said: "The manager told me to ask you which you required, the 'strong' or the 'mit.'; I've made a mistake and given you the 'mit.' without informing you." He admitted that the order was not in the form of a physician's prescription.

The Magistrate: If a physician's prescription is taken into a chemist he would not take it upon himself to alter it?

Mr. Beck: I draw a distinct line between this written order and a physician's prescription.

Mr. Beck, in opening for the defence, made the following points: The dilute ointment supplied was usually known in the trade as "mercury ointment"; that the Pharmacopœia was a standard for medical prescriptions, but that there may be a commercial standard apart from the Pharmacopœia; that it was dangerous to supply the strong mercury ointment unless specially required; that the dilute ointment was in very general use, and that there was a well-known commercial standard for it; that the case of Dickens *v.* Randerson did not necessarily imply that everything in the Pharmacopœia must be sold in conformity to the Pharmacopœia when asked for.

The Magistrate: Is there any difference in the cost of these two ointments?

Mr. Beck: The price charged was that of the weaker ointment, 4d. oz.; the usual price for the stronger is 6d. oz.

Mr. J. F. Quin, assistant to Messrs. Lamplough, said he received the written order from the manager, and, in consequence of a conversation he had with him, he "put up" the dilute ointment. He charged a 1s. for a 3 oz. pot; the same quantity of the stronger ointment would have been 1s. 6d.

Mr. A. C. Coleman, the manager, said he took the order from the Inspector. He did not think it was a physician's prescription. There was no symbol at the top, no signature at the bottom, and no instructions for use.

A lengthy argument then took place as to whether evidence as to a commercial standard was admissible or not. Finally the Magistrate said: I will listen to this evidence to guide me as to the penalty I shall impose.

Mr. W. S. Glyn-Jones said he was a member of the Pharmaceutical Council and familiar for eighteen years with the sale of the ointment. He bore out, generally, Mr. Beck's opening statements, and added that if he had received the order in question, without the addition of the words "fort." or "B.P.," he would have supplied the dilute ointment.

The Magistrate, in giving his decision, said: If you go to a chemist and ask for one thing and get another, I ask, Is it right? I do not think it was done fraudulently in this case, and I impose the nominal penalty of 2s. 6d., with 18s. 6d. costs.

Mercury Ointment.

At the Mansion House Police Court, on January 27, before Alderman Sir Horatio Davies, Mr. J. C. Meacher, 1a, Wood Street, Cheapside, E.C., pleaded guilty to a charge of selling mercury ointment which was deficient in strength.

Mr. Vickery, who prosecuted on behalf of the City Council, explained that the deficiency in this case was 60 per cent. of the mercury the ointment should have contained. The sum of 1s. 6d. was charged—6d. more than in the previous case. There was no suggestion of fraud, but it was important that these preparations should be compounded according to the B.P.

The Magistrate (Alderman Davies) said the price was not so much an element, as chemists charged different prices. He regarded this as a more serious case than the previous one, as the defendant had conformed to no recognised standard, but had manipulated one of his own. He imposed a fine of 40s. and 12s. 6d. costs.

Medicine Stamp Acts.

Penalty for Not Holding a Licence.

At Ruabon Police Court, on January 24, a grocer, named Benjamin Davies, of Cefn Mawr, was prosecuted by the Board of Inland Revenue for selling a medicine liable to stamp duty without holding a licence.

Mr. F. A. Stirk, who prosecuted on behalf of the Somerset House authorities, said the case was of much importance. The local Inland Revenue officer, Mr. George Ulyett (Cefn Mawr), entered defendant's shop on October 31 last and purchased a penny powder, warranted to cure neuralgia. Defendant admitted he had no licence, and refused to obtain one.

Defendant pleaded ignorance of his liability, and said he sent the powders back immediately, and therefore did not obtain a licence.

A penalty of 12s. 6d., inclusive of costs, was imposed.

Pharmacy Act, 1868.

Proceedings under Section 17.

At the Portsmouth Police Court, on Tuesday, January 28, the Pharmaceutical Society conducted a prosecution under Section 17 of the Pharmacy Act wherein Mr. Woolmer R. D. White, J.P., trading as the "Timothy White Drug Company," was charged with having unlawfully sold a certain poison, to wit, oxalic acid, without distinctly labelling the wrapper in which the poison was contained, with the address of the seller.

Mr. Burley prosecuted and Mr. Brutton defended.

Mr. Burley said that oxalic acid being a poison within the meaning of the Pharmacy Act, 1868, ought to be distinctly labelled, and the label should bear the name and address of the seller of the poison, and the Act specifically stated that for the purposes of this section the employer was held responsible for the acts of his assistant, or manager, or salesman, and was the "seller" within the meaning of the Section. On November 25 a Mr. Pidsley, acting on instructions from the Pharmaceutical Society, purchased at one of the defendant's shops, in Stamshaw, Portsmouth, a pennyworth of oxalic acid, which was given to him in a wrapper upon which was placed a label bearing these words, "Oxalic Acid," and then above and below that, "Timothy White Company, Chemists by Examination. Pharmacies throughout the South of England. Prescriptions dispensed by qualified chemists at half the usual charges." There was no address on the label, simply "Pharmacies throughout the South of England," and he remarked upon the serious consequences that might ensue by reason of there not being an address by which they could find the person who sold the poison. From this label it would be impossible to tell at which of the defendants' numerous branch shops this particular poison was bought. Mr. Woolmer White was himself a member of the Pharmaceutical Society, and clearly knew what was the law in relation to the matter. He mentioned also that though they were not charging this as a second offence, Mr. White had been previously convicted, at Petersfield, under this section.

Evidence was then called in support of the prosecution, and Mr. Brutton cross-examined to show that though the address of that particular branch might not be on the label, there would be no difficulty whatever in finding Mr. Woolmer White, the defendant, seeing that in Portsmouth his establishments were as well-known as was the Town Hall.—Mr. Pidsley, in reply to Mr. Brutton, said that when he paid for the oxalic acid which he purchased he received a receipt for the penny.

Colonel Owen (the presiding magistrate): Did you see the name and address of the firm on that receipt?—No, I did not.

Colonel Owen: Well, here it is.

Mr. Matthews (another magistrate) pointed out that that form of receipt bore no less than twenty-eight addresses, including the address of the shop at which the poison was obtained.

Mr. Brutton, in reply to the charge, contended that it was not necessary for the defendant to give the address of any and every particular shop if he gave an address at which he himself could be readily discovered. And he had done so in this case, for the "Timothy White Company" was known to everybody, and their establishments were as well-known as the Town Hall. He regarded this as merely a vindictive prosecution, the real grievance being that, as the label set out, prescriptions were dispensed at "half the usual charge." Therein lay the whole offence, for it was idle to suggest that the identity of the defendant was not fully established by the label and his address not perfectly well known. But even assuming the label produced to have been an insufficient one—which he did not admit—the defendant had shown his anxiety to comply with the wishes of the Pharmaceutical Society, for after the Petersfield conviction, to which reference had been made, he had instructed his managers to withdraw that form of label and substitute for it a new label, on which was printed the address of the branch at which it was used. They were told, on the issue of this new label, to destroy all the old ones, but apparently they had not all done so, for in this instance the manager of the Stamshaw shop had inadvertently used one of those which defendant thought had all been destroyed. He contended that under those circumstances the defendant was not liable for the act of a servant who had acted in direct contradiction to his express instructions.

This point was argued at some length, but Mr. Fisk (the magistrates' clerk) advised the Bench that under this particular section of the Act the responsibility of the employer held good, and the Court, after hearing all the evidence, held that a technical offence had been committed, and imposed a fine of 1s. and the costs, 13s. 6d.

NOTES IN PARLIAMENT.

The Small-Pox Epidemic.—There is a wholesome fear amongst members of Parliament lest the small-pox epidemic should not be stamped out, or at least be effectually coped with, before the Coronation festivities add a few hundred thousand visitors to the normal population of London. To this must be attributed the many questions which are being addressed to Ministers on the subject of precautionary measures. It is very certain that if the programme of the Government were not already weighted there would be a determined effort made to pass a Bill repealing the conscientious-objector clause, which is believed to have greatly reduced the efficacy of the vaccination law.

Glycerinated Calf Lymph.—Mr. Bartley, Mr. Platt-Higgins, and other members think that arrangements should be made by which private medical practitioners may purchase glycerinated calf lymph from the Lymph Establishment of the Local Government Board. According to Mr. Long, however, who has been questioned in the House on the subject, the statutory duty as regards the supply of this lymph is limited to supplying it to public vaccinators, and the Lymph Establishment was formed for that object. Arrangements were made early in the outbreak to extend the supply so as to enable lymph to be provided for use by those officers in revaccinations, and a very large amount was supplied for this purpose. More lately, however, the demands have so very much increased that, although the establishment has been doubled to meet them, it has become impossible for the moment to supply all the lymph required even for primary vaccination.

Where the Lymph Comes From.—Questioned by Mr. Corrie Grant as to where the lymph supplied by the Government is derived from, Mr. Long on Monday stated that it is derived from calves which had been vaccinated with lymph from other calves, and is not obtained by inoculating animals with small-pox. To the question whether a pure culture of the organism of vaccinia could be supplied in place of lymph, Mr. Long replied in the negative, as he did also to the question whether the strength of the virus could be standardised so as to measure the dose administered. He added that, while the Government give no guarantee, they use every effort to secure that their lymph shall be free from undesirable organisms. As at present advised, the Government do not propose to ask for power to control the lymph supplied from other sources.

Vaccination Statistics.—Mr. Long is not in a position to give any estimate of the number of vaccinations and revaccinations which have been performed during the present epidemic of small-pox. The returns as to vaccination of infants born in 1901 and as to revaccination by public vaccinators will be received in due course, but there is no record of revaccination performed by private practitioners. Mr. Long, however, has every reason to believe that there has been a very large number of revaccinations, public and private, within the last few months in London and the neighbourhood. Since the beginning of September lymph has been issued to public vaccinators for 480,000 vaccinations, or about 300,000 in excess of the normal supply for this period. A very considerable proportion of the excess has been issued to the metropolis.

Cancer Investigation.—Mr. Arthur Lee and Dr. Farquharson have questioned the First Lord of the Treasury on the subject of cancer investigation. Mr. Lee desires the appointment of a Royal Commission on Cancer, on similar lines to that which has been appointed to inquire into tuberculosis. Dr. Farquharson, however, thinks that course at present undesirable, and, before Mr. Balfour could reply to Mr. Lee, managed, in the form of a question, to direct attention to the scheme backed by the leaders of the medical profession for organising research as to cancer. Would the Government, he asked, await the development of this scheme before committing themselves to "the costly and dilatory process of a Royal Commission"? Mr. Balfour had, of course, heard of the scheme to which Dr. Farquharson referred. He wished it success. He was not personally in favour of attempting to deal with the subject by means of a Royal Commission. He did not, as at present advised, think the cases of cancer and tuberculosis are at all parallel, and he pleasantly added that he thought the number of great scientific discoveries made by Royal Commissions was "probably very limited."

Early Closing.—Lord Avebury has reintroduced in the Lords his Bill of last year providing for the earlier closing of shops. He did not fail to voice the disappointment of various shopkeepers' associations all over the country that the Government have not themselves proposed to bring in a Bill on the subject, having regard to the unanimous recommendations of the committee of last year.

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply.

Extraction of Teeth (J. D.—69/23).—Gorham's 'Tooth Extraction' (H. K. Lewis, 1s. 6d.) describes the proper methods of extracting teeth.

Mistura Gummosa, Ph.G. (G. B.—69/22).—Mucilage of acacia (gum, 1; water, 2), 25 parts by weight; syrup (sugar, 3; water, 2), 15; water, 60. All the ingredients must be weighed.

Photographic Notes (J. P.—116/35).—Your interest in the matter appears to be great and you are, of course, entitled to your own opinion, but we are not prepared to publish offensive criticisms in anonymous communications.

Glasgow Pharmacies (M. D.—117/40).—You are apparently unaware of the fact that it is not illegal for a chemist and druggist to leave his shop in charge of an unqualified assistant. Such conduct is undoubtedly unprofessional, but the Pharmaceutical Society is powerless in that matter. You assume too much and your information about the method of procedure is incorrect. Please note what was stated last week at page 69, and cease to make baseless charges anonymously.

Corrections.

The Students' Columns.—At page 40, column 2, lines 5 and 6, for "inner seed coat or tegmen," read "perisperm"; also at line 25, for "tegmen," read "perisperm."

Pharmaceutical Journal

SATURDAY, FEBRUARY 1, 1902.

A Copy of this Inset is inserted in every Copy of the *Pharmaceutical Journal* issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. The Inset can also be obtained by personal application, on the day of publication.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

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SALE AND EXCHANGE . Page 13

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

100 Idris A Preference. 21/-.—O., 39, Quentin Rd., Lee, S.E.

Platinum Utensils and scraps for cash.—P. Rowsell, 9, Derwent Grove, Dulwich.

Pharmacopœia Germanica and Codex Francaise.—Apply, Salol, 8, Serle St., W.C.

Herbarium and Materia Medica specimens, collection of, suitable. Minor exam.—G. E. Ainslea, Scotstounhill.

Fernie's "Herbal Simples," second edition.—Particulars and price to A. R., Pharm. Journal Office, 8, Serle St., W.C.

OFFERED.

4s. 6d. Roscoe's "Chemistry," new, cash 3/3.—Clark, 11, Market Place, Sleaford.

Slides, secondhand, 4½d. each; Hand-painted photos; lists free.—T. Wing, Chatteris.

Squire's Companion, latest, 7/6; Formulas, 6/-; new.—Hay, 82, King St., Aberdeen.

200 Idris A Ordinary, 26/- each. Last 4 years dividends 10 per cent.—M., 30, Tranquil Vale, Blackheath, S.E.

Camwal Shares. 2 Ordinary, 1 Preference; best offer accepted.—Meta, Pharm. Journal, 8, Serle St., W.C.

Quain's Dictionary of Medicine, 1885; 2 vols.; half morocco; good condition. What offers?—Trional, 8, Serle St., W.C.

Gross 1/-, Leath and Ross's Homœopathic Medicines, as new, saleable kinds, 2/3 per dozen.—Homœopathic, 8, Serle St., W.C.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

OFFERED—*Continued*

Offers requested for *Chemist and Druggist* from commencement down to present time; 59 vols.; unbound.—Griffin, Chemist, Kidderminster.

Perfume Ribbons, quarter inch wide, 36 yards long, post free, 1/6. Blue, Pink, Green, Mauve, Crimson, Salmon (6 rolls, 7/6).—Edward Peck, East Dereham.

Real Bargains—Must be Cleared—3 Rows Mahogany-fronted Shelves for Shop Rounds, 7 Mahogany Pilasters, 18ft. long, 5ft. high (with Grained Cornice), for 35/-; another length, 6ft. 6ins., with 3 Pilasters, Matchboard Back, Painted Green, 30/-; another lot, 5ft. long, 25/-; 23, 6-lb. White Shop Jars, Gilt Labels, Japanned Lids, Maw's Fig. 16, second-hand condition, 1/3 each (cost 3/-); 12, 6lb. Blue Jars, Canopy Lids, Labelled, 1/3 each; 11, 8lb.; 19, 7lb.; 6, 5lb. White Shop Jars, Canopy Lids, Unlabelled, never used, 1/3 each (quantity less); 5, 4lb. ditto, New Gilt Labels, for 7/6; 5 Gross Marking Ink Bottles, 2/3 Gross; very Handsome Specie Jar, Gilt Glass Lid, Maw's Fig. 1, 35in. high, splendid condition, 35/- (dirt cheap); 2 ditto, 2in. Lids, 23ins. high, want re-labelling, 15/- each; 2 for 25/-; 1 ditto for 10/-; 4 ditto, 26in. high, Fig. 1; second-hand condition, 15/- each; number Handsome Mahogany Stands, for ditto, or Carboys, very cheap; 2, 2-Gallon Pear Shape, Carboys, 5/-; another, 2 for 7/6; one, 6 or 8-Gallon, ditto, cut stopper, 10/-; 5, 16oz. Blue Syrups, 8d. each; Gilt Labels, 12, Quarts, 1/-; 7, Pints, White Syrups, 8d.; 6 doz. Pint Shop Rounds, 6d. each; Quart size, 10d.; 14, Gallon Black Store Bottles, Tin Caps, 6d.; Brass Pillar Counter Scales, Mahogany Drawers, 10/6 and 12/6 (cost treble); well-made Wood Signs, 30in. by 7½in., 2/6; 5ft. by 12½in., 5/-; 7ft. by 12½in., 6/; 14ft. 6in. by 23in., 15/-; well-made Mahogany and Plate Glass Case, Sloping Top, 45in. long, 28in. back to front, 15in. high at back, useful for storing Photographic Goods, &c., £2; Sloping Top Mahogany Flat Case, 14in. by 13½in. by 6in. (back), 3/6; 2 Mahogany Cigar Cases, 6/- and 7/6; Maw's ½-Gallon Tincture Press, 15/-; 3 Iron Mortars, several Wedgwood, cheap; ½-Gallon Yeoman's Patent Glass Measure, stamped, graduated, oil runs into top and out in customer's bottle at bottom, new, £1 1s.; Nest of very large Drawers on rollers, 39in. deep, 44in. long, 34in. high; useful for storing Trusses, &c., only 30/-; lots of other things.—Griffin, Chemist, Kidderminster.

Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

DISPENSER wanted; mornings 9 to 1, evenings 5 to 9.30.—Apply, Dr. Marrett, 101, Southgate Rd., Islington.

WANTED, a Junior or Improver (indoors).—State usual particulars and enclose photo to G. Crawshaw, Pharmacist, Hyde Park, Leeds.

JUNIOR, qualified, for City business; short hours; no Sunday duty; commencing salary (indoors) £55.—Apply, Henry Lamplough, Limited, 113, Holborn Circus, E.C.

LONDON, W.C.—Junior, qualified, with town experience, for good-class Retail and Dispensing business.—Apply, personally or by letter, to R. S. Starkie, 126, Strand.

LEICESTER.—Frederick G. Brice, South Wigston, near Leicester, wants good qualified Manager (house and gas free).—Please give full particulars, salary, references, &c.

BATH.—Wanted, Assistant, accustomed to Light Retail and Dispensing; indoors.—State age, references, salary required, and enclose photo, H. Alcock, London Rd., Bath.

JUNIOR, of good address, about 20; outdoors; with knowledge of photographic trade preferred.—Full particulars as to salary, experience, &c., and enclose photo, E. Bing & Son, Pharmaceutical Chemists, Canterbury.

WANTED, for Calcutta, an Assistant, well up in practical work, with Minor qualification; aged not over 24 years; 4 years' agreement; passage paid out and home; good salary to a competent man.—Apply, by letter, to H. A., Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

APPLICATIONS are invited for an Important Post (progressive) in the office of a London Drug House. Experience of Wholesale essential. Liberal salary to suitable man. Replies treated in strictest confidence.—Send all particulars, including age, detailed experience and present salary, to Senior, c/o Mather & Crowther, Ltd., New Bridge St., E.C

QUALIFIED Manager of Branch Pharmacy required shortly, under 30, single, of unimpeachable character, good appearance and address, with West-end experience; to a capable assistant desirous of a permanency a liberal and progressive salary offered.—Apply, giving age and enclosing photo (to be returned), to R. Hayton Davis, Pharmacist, High Harrogate.

INDIA (N.W. Province).—Wanted a good Assistant, well up in all branches of a Chemist's business; minor qualification; salary—1st year 150 rupees per month, 2nd year 175 rupees per month, 3rd year 200 rupees per month; free furnished apartments; second-class passage paid out; required to start early in April; candidates must hold undeniable references.—Address, India, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CAPE COLONY.—Wanted, good Assistant, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £140; second year, £150; third year, £160; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, Cape, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified Assistant; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to Straits Settlements, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM; disengaged; qualified; good experience.—Forth, 169, London Rd., St. Leonards-on-Sea.

PART-TIME wanted by Minor Student.—Locum, 21, Lorrimore Square, Kennington, S.E.

ASSISTANT; qualified; age 22; disengaged.—Pharmacy, 91, Kingswood Rd., Moseley, Birmingham.

LOCUM, M.P.S.; town or country; disengaged.—W. Smith, 12, Westfield Rd., Surbiton.

BOARD or equivalent, for evenings.—Statim, 8, Rosenau Crescent, Battersea Park Rd.

MANAGER or Dispenser; abstainer; reliable; qualified.—W., 5, West Hill Rd., Brighton.

QUALIFIED; good experience; 5 ft. 7 in.; outdoors preferred.—M.P.S., 14, Branch Rd., Batley.

MANAGER; qualified; age 52; near London. — Alpha, 6, Victoria St., Cwmbran, Monmouthshire.

DISPENSER (Lady); qualified; testimonials. — Write, Coventry, 130, Portnall Rd., Maida Hill, W.

COMPETENT, reliable Assistant; experienced; outdoor berth perferred.—Fides, 55, Fore St., Redruth.

ASSISTANT; disengaged; outdoors; good experience.—Phenazone, 21, Steerforth St., Earlsfield, S.W.

DISENGAGED; 26; qualified; West-end experience; first-class references.—F., 27, Talbot Rd., Bayswater.

ASSISTANT; disengaged; outdoors; London; time for study.—Weston, 54, Hillmarton Road, Holloway.

ASSISTANT; age 30; good experience; splendid references; tall.—G. F., Pharm. Journal Office, 8, Serle St., London, W.C.

LADY Dispenser and Book-keeper desires re-engagement in or near London.—Apply, Hogg, 5, Fairfax Rd., Hampstead, N.W.

SATURDAY help and every other Sunday evenings; good references and experience.—Bismuth, 1, Great College St., N.W.

DOCTOR'S Dispenser and Book-keeper; experienced; qualified; single. — Chemist, 77, Bristol St., Hulme, Manchester.

£2 WEEKLY; outdoors; age 24; unqualified; good knowledge of Photographic trade.—A. Mason, 6, Clytha Park Rd., Newport, Mon.

QUALIFIED Lady Dispenser (Hall certificate) disengaged; London experience; resident or otherwise.— L., Pharm. Journal Office, 8, Serle St., W.C.

LOCUM TENENS; days, weeks; moderate; reliable; engagements booked forward.—T. C. Beach, M.P.S., Windsor Edge, Inchbrook, Stroud, Glos. Telegrams: Beach, Nailsworth.

MAJOR; 27; first-class dispensing and retail experience; desires permanent engagement as Assistant or Manager; outdoors. — Chemicus, 7, Cornwall Terrace, Manningham, Bradford.

Engagements Wanted—Continued.

UNQUALIFIED; 25; Dispenser; Extractor; Photography; abstainer; able to take charge; ten years' all-round experience; outdoors; disengaged.—EXCELSIOR, 12, Bowker St., Higher Broughton, Manchester.

EMERGENCY.—LOCUM TENENS; qualified; middle-aged; abstainer; Extractor; long or short periods; disengaged; usual terms, reasonable; references.—Telegraph, BREWERTON, 133, Liverpool Rd., Birkdale, Southport.

BRANCH MANAGER; 32; married, no family; Prescriber; Dispenser; Extractor; Counterman; good experience; town or country; qualified; disengaged; excellent references. —CHEMICUS, 99, Hangingwater Rd., Ranmoor, Sheffield.

Apprenticeship

APPRENTICE.—Vacancy for a well-educated YOUTH as indoor Pupil; careful personal instruction and every home comfort; premium required.—H. J. BROUGH, Pharmaceutical Chemist, Netherwood Rd., West Kensington, London, W.

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows:—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

IPSWICH.—For Disposal.—Chemist's BUSINESS, Goodwill, Stock-in-Trade, Shop Fittings, and unexpired Lease of Dwelling House and Business Premises for 12 years at £35 per annum.—For further particulars, apply to Messrs. ROBT. BOND & SONS, Auctioneers Ipswich, Suffolk.

TO CHEMISTS and DRUGGISTS.—For immediate Disposal, the old-established Retail Chemist and Druggist BUSINESS of Taylor, Gibson & Co., Bigg Market, Newcastle-on-Tyne, doing a town and country trade.—Apply, JOHN M. WINTER & SONS, Chartered Accountants, Newcastle-on-Tyne.

LONDON (N.E. Suburb).—Old-established Chemist's BUSINESS for Sale; same hands 10 years; well situated in busy main road; late owner had considerable Dental connection; Chemistry returns £450; good house, 9 rooms (sanitary certificate), garden, private door; long lease.—Particulars on application, NORTH, Pharm. Journal Office, 8, Serle St., W.C.

OLD-ESTABLISHED BUSINESS in Birmingham doing £800, gross profits £575. General Retail, Prescribing and Photographic; in present hands 11 years; owner just bought a larger business; good double-fronted shop, nicely fitted; roomy house; will accept value of stock and fixtures (about £450), part of which can remain, if desired. An exceptional chance. No Agents answered.—RADIX, Pharm. Journal Office, 8, Serle St., W.C.

Business Wanted

WANTED, a good-class Retail BUSINESS in small country town (Midlands preferred); must have good house attached. Capital £1,000.—Address, CORTEX, Messrs. Southall Bros. & Barclay, Birmingham.

Shop to Let

CHEMIST'S Splendid Opening.—Spacious Shop with plate-glass front; concrete cellar and vaults; main road, busy neighbourhood; all adjoining shops let to old tenants; large bank in same block; excellent opportunity as branch business; rent £100; direct from owner.—View, 2, Bank Building, West Kensington (close to station). Note.—Chemist's shop recently absorbed by bank for extension.

CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., CHEMISTS' TRANSFER AGENTS, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

The Business conducted by MESSRS. ORRIDGE & CO. has been known as a Transfer Agency in the advertising columns of the PHARMACEUTICAL JOURNAL since the year 1846, and is well known to all the leading firms in the Trade.

VENDORS have the advantage of Messrs. O. & Co.'s direct attention and advice as to value without any additional fees.

PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

Terms for Valuation on application.

THOMAS TOMLINSON & SON

Chemists' Transfer Agents and Valuers,

9, NEW CANNON STREET, MANCHESTER.

VENDORS saved time and trouble by consulting before offering for sale. PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address*, "TOMTOM."

Shop Fittings for Sale

PLATE-GLASS Shelves, polished edges, 3 ft. long by 20 in., 16 in. and 12 in. standard bars and brackets, complete £3 10s. Chemist's Side Fittings, from £1 foot run. Counters from 7s. 6d. foot run. Counter Cases from 7s. foot run. Dispensing Screen, 6 ft. long, £6 10s. Cheapest house for blinds, mirrors, shelves, lamps, and window fittings.—**TREBLE & Co.**, Complete Shop Fitters, **RECTORY WORKS, RENDLESHAM ROAD, CLAPTON, LONDON, N.E.**

READING COVERS Cloth, Gilt-lettered Covers, with strings, to hold twenty-six numbers of the "**Pharmaceutical Journal,**" may now be obtained. The charge, including postage, is **2/-** each, and should be remitted to

The PUBLISHERS, 8, SERLE STREET, LINCOLN'S INN, LONDON, W.C.

Birth

VALLANCE.—On the 26th ult., at Fieldhead, Mansfield, Notts, the wife of Arthur C. Vallance, of a son.

PERSONAL.—Should this come to the notice of anyone knowing the present address, or having any late information respecting Mr. JOSHUA JONES, who some years ago carried on business as Chemist at Holton Road, Barry Dock, will they kindly send same to D. R., 116, Victoria Street, Bristol.

CHEMISTS' WHITE ENVELOPES.—Job Line; 1s. 9d. per 1,000; $3\frac{3}{4} \times 2\frac{1}{8}$ and $3\frac{7}{8} \times 2\frac{3}{8}$.—CHIPCHASE, Skinnergate, Darlington.

FOREIGN NEWS.

(From Our Paris Correspondent.)

Illegal Exercise of Pharmacy.—The Correctional Tribunal of Clermont-Ferrand has recently given judgment in a batch of cases brought by the Syndicat des Pharmaciens de Clermont-Ferrand against a grocer of Chamalières, a midwife of Lempdes, and six religious communities in the Clermont-Ferrand district, all of whom are charged with the illegal exercise of pharmacy. The syndicate claimed 10,000 fr. (£400) damages, but the midwife and grocer were acquitted, and the religious bodies fined sums varying from £1 to £2, with the benefit of the Berenger (or First Offenders) Law. Their pharmacy, however, was ordered to be closed. It has always been a thorn in the side of pharmacists that such an anomalous state of things should be winked at and tolerated by the authorities. This illicit dabbling in amateur pharmacy pertains among certain religious orders to an alarming extent, and in many instances proves a dangerous menace to pharmacists who unfortunately happen to be established in the vicinity of their retreat. Indeed, when one considers the amount of attention they pay to, not only dispensing, but the launching of their own pet quack nostrums, one is tempted to ask when they can find the time to devote to their self-imposed religious duties, which are generally supposed to be onerous and continual. Their plea, which is generally that of employing a means to a charitable end, does not always fall upon kindly-disposed judicial ears, and now and again these "orders" have a warm time. However, the Clermont-Ferrand pharmacists may congratulate themselves that they have virtually eradicated the evil in so far as they are concerned, and created a precedent which other syndicates would do well to follow.

To Combat Tuberculosis.—On Sunday afternoon, January 19, an extremely interesting lecture was delivered by M. Rouanet at Montmartre concerning the useful work now being done by the anti-tuberculous dispensaries of Paris. The Prime Minister (M. Waldeck-Rousseau), as also Dr. Brouardel (ex-doyen of the Faculty of Medicine), and Professor Landouzy, Adrien Veber, Siegfried, De Selves, M. Pugeault (Mayor of the Eighteenth Arrondissement), and M. Léon Bonnet (Director of the Rue de la Marcadet Dispensary), imparted additional importance to the meeting by the fact of their active participation in it. M. Waldeck-Rousseau, being the first to speak, said he deplored the fact that tuberculosis had already obtained such a firm footing in France, especially in the country places, that it was regrettable to learn that France was so much behind England in the adoption of the highest means of combating this disease. He went on to say that there was, however, no necessity to despair, for contagion could in a great measure be prevented by each and all in the rigorous observance of the principles of hygiene; and, where the disease already existed, therapeutics must be relied upon to consummate the cure, when aided by an amelioration in the material conditions of the individual sufferers. As head of the Government, he promised to do his utmost to facilitate and help on the yeoman work being accomplished by the founders of these dispensaries, and, where possible, increase their numbers, not only in Paris, but in the provinces. M. Rouanet in turn pronounced a long discourse upon the social *rôle* of these anti-tuberculous societies, and Dr. Brouardel gave an outline of the progress effected.

SOUTH AFRICAN NEWS.

(From Our Cape Town Correspondent.)

A Medical Prosecution.—Emma Kate Sherlock, was brought up on remand on a charge of having contravened Sections 35 and 45 of Act 34, 1891, as amended by Act No. 7 of 1899. She was, in the first place, charged with having practised as a medical practitioner without a licence, and also with having sold poison. A preliminary examination was held by the Assistant Resident Magistrate some time ago and the papers sent to the Attorney-General, who had remitted the case for the decision of the magistrate. Mr. Williams again took evidence which had been heard at the previous hearing, which was to the effect that the accused sold boxes of pills which were shown to contain opium and other ingredients. The defendant, in her evidence, said she did not know the contents of the pills and made nothing out of them, but admitted she did not hold a licence. Mr. Williams said that he would reserve judgment for a week.

Appointment of a Transvaal Medical Board.—A proclamation has been issued in the Transvaal, making provision, until the appointment of a Medical Board, for duly qualified persons to practise as medical practitioners, dentists, chemists, and druggists. One clause provides that no licence should be granted to applicants to practise as physicians, surgeons, or dentists, on any degree, diploma, or certificate of any foreign University or Medical School, unless it be proved that such degree or diploma entitles the holder to practise in his own country, and that, by the laws of such country in which the degree or diploma is conferred, British subjects, legally qualified to practise in Great Britain and Ireland, are afforded privileges equivalent to those granted by licences under the proclamation.

AMERICAN NEWS.

Advertising. The house to which President McKinley was taken after the fatal shot had been fired happened to be near the store of a druggist named Kingston, who, in consequence, was called on to supply many of the necessaries. The bill amounted to over sixty-eight dollars, and was, of course, paid in due time. The enterprising druggist thought it would be a good idea to photograph the cheque and circulate the photos by way of advertisement. The United States Government did not see it in the same light, and pronounced the proceeding to be a forgery. No action was taken, however, as it was quite plain that Mr. Kingston was not aware that he was breaking the law.

Bovine Tuberculosis.—When Dr. Koch made the startling announcement that bovine tuberculosis was not communicable to human beings it was thought by everybody that, except possibly by an untoward accident, the correctness or otherwise of the theory must go unchallenged as far as actual experimental facts were concerned. This doubtless, would have been the case but for a foolhardy, not to say criminal, experiment. Quite recently a wealthy young American lady has voluntarily "submitted" to inoculation with bovine tubercle. There are of course, several factors to be considered which make it possible for the man in the street to in some degree appreciate the action of the lady, but what is more difficult to in any way understand is that any medical man should have taken on himself such a grave and altogether unwarrantable responsibility as the experiment involves. Granting that he is imbued with the same childlike faith in the theory which must have possessed the lady that does not exculpate him, and it will occur to most people to suggest that he might have tried it on himself first. He seems rather to be like the old lady with the fly-papers, who knew that they were harmless to animals, but preferred to try their effect on somebody else's cat before hazarding her own precious one. Later information is to hand —though as to its authenticity we cannot express an opinion— stating that the patient has since developed the disease in a very virulent form. If this is the case—and it is by no means improbable—one cannot help a feeling of sadness that such an awful sacrifice has been offered, and it is to be hoped that the doctor will not be held guiltless in the matter.

Claim for Damages.—When a person comes into the shop with an injured thumb, or other slight flesh wound, the tender-hearted druggist does not send the sufferer in search of his doctor, who may be "not at home," but generally dresses the injury—surely not for the pecuniary benefit to himself—and in most cases with satisfactory results as far as the patient is concerned. If, however, anything should go wrong the unlucky druggist is sued for damages. There is a case on now in the Minnesota courts, in which a St. Paul man claims 2,500 dols. for the loss of his thumb. The *Bulletin of Pharmacy* points the moral that pharmacists should "have a care" in this vexed question of counter-prescribing.

Calendar for February, 1902.

Day of M	Day of W	Events of the Month.	Sun Rises	Sun Sets.
1	S	Inter-Pharmacy Football League, Metros. *v.* London.	7.42	4.46
2	**S**	**Sexagesima**	7.40	4.48
		Funeral of Queen Victoria, 1901.		
3	M	Royal Institution, General Meeting, at 5 p.m.	7.39	4.50
		School of Pharmacy Dinner, Holborn Restaurant.		
		Society of Chemical Industry, at 8 p.m.		
4	Tu	Pharm. Soc. G. B. Finance and other Committees.	7.37	4.52
5	W	Pharm. Soc. G.B., Council Meeting, at 11 a.m.	7.35	4.54
		Pharm. Soc. Ireland, Council Meeting at 3 p.m.		
		Chemists' Managers' and Assistants' Society.		
		Young Chemists' Association (Newcastle).		
6	Th	Chemical Society at 8 p.m.	7.33	4 55
		Chemists' Assistants' Association.		
		Halifax Chemists' Dinner.		
		Linnean Society, at 8 p.m.		
		Midland Pharmaceutical Association.		
7	F	Royal Institution, at 9 p.m.	7.32	4.57
8	S	● New Moon, 1.21 p.m.	7.30	4.58
		Inter-Pharmacy Football League, Muter's *v.* Metros.		
9	**S**	**Quinquagesima.**	7.28	5.0
10	M	Judgment in Piper's Case, 1893.	7.26	5.2
11	Tu	Pharm. Soc. G.B., Evening Meeting in London.	7.25	5.4
		Bradford Chemists' Association.		
12	W	Pharm. Soc. G. B. Library, etc., Committee.	7.23	5.6
		Chemists' Managers' and Assistants' Society "Smoker."		
		Manchester Pharmaceutical Association.		
		Newcastle Chemists' Association "Smoker."		
13	Th	Chemists' Assistants' Association "Impromptu."	7.21	5.8
14	F	Royal Institution, at 9 p.m.	7.19	5.10
		School of Pharmacy Students' Association.		
15	S	◗ First Quarter, 2.57 p.m.	7.17	5.12
		Inter-Pharmacy Football League London *v.* Muter's.		
16	**S**	**First Sunday in Lent.**	7.15	5.13
17	M	Pestalozzi died, 1827.	7.13	5.15
18	Tu	Royal Charter of Incorporation granted to the Society, 1843.	7.11	5.17
19	W	Pharm. Soc. G.B., Evening Meeting in Edinburgh.	7.10	5.19
		Chemical Society at 5.30 p.m.		
		Western Chemists' Association.		
20	Th	Chemists' Assistants' Association.—"Social."	7.8	5.21
		Linnean Society, at 8 p.m.		
21	F	Royal Institution, at 9 p.m.	7.6	5.23
		Meeting in Edinburgh of the Pharmaceutical Society.		
22	S	○ Full Moon, 1.3 p.m.	7.4	5.25
		Inter-Pharmacy Football League, Square *v.* London.		
23	**S**	**Second Sunday in Lent.**	7.2	5.27
24	M	Grant Allen born, 1848; died, October 25, 1899.	6.59	5.28
25	Tu	Bradford Chemists' Association.	6.57	5.30
26	W	Chemists' Managers' and Assistants' Society.	6.55	5.31
		Huddersfield Chemists' Dinner.		
		Junior Pharmacy Ball.		
27	Th	Chemists' Assistants' Association.	6.53	5.33
28	F	Royal Institution, at 9 p.m.	6.51	5.35
		School of Pharmacy Students' Association.		

APPLICATIONS FOR TRADE MARKS.

From the Trade Marks Journal, January 29, 1902.

Class 1.

Auronal. 240,449. Chemically Prepared Artificial Dye Stuffs included in Class 1, Chemical Substances and Preparations included in Class 1 used in the manufacture of the same and in Photography. Chemische Fabriken vorm. Weiler-Ter Meer, Uerdingen-on-the-Rhine, Prussia; Chemical Manufacturers.—September 4, 1901. Address for service in the United Kingdom, care of Urquhart and Bollé, 57, Barton Arcade, Manchester. No claim is made to the exclusive use of the word "Auro" or of the word "Aurone."

Galvanite. 243,062. Chemical Substances used in the Manufactures, Photography, or Philosophical Research, and Anti-Corrosives. Griffiths Bros. and Co., 29, Macks Road, Bermondsey, London; Paint, Colour, and Varnish Manufacturers.—January 3, 1902.

Driorol.—243,080. Chemical Substances used in Manufactures, Photography, or Philosophical Research, and Anti-Corrosives. Griffiths Bros. and Co., 29, Macks Road, Bermondsey, London; Paint, Colour, and Varnish Manufacturers.—January 4, 1902.

Class 2.

Puritan.—240,739. All goods included in Class 2. Frederick John Griffin, 96, Gainsborough Road, Wavertree, Liverpool; Manager to a firm of Dyers and French Cleaners.—September 18, 1901.

Antsaptic.—242,655. A Chemical Compound for Use for Destroying and Preventing the Ravages of White Ants and other Insects, also a Disinfectant and Antiseptic (included in Class 2). T. A. Mackenzie and Co., 16, Billiter Buildings, Billiter Street, London, E.C.; Paint Manufacturers.—December 13, 1901.

Fixatine.—243,014. All the Goods included in Class 2. George Fountaine Weare Hope, 18 and 19, Ironmonger Lane, London; Director of a Public Company.—January 1, 1902.

Class 3.

Thapsyne.—241,701. An Internal Medicine for Human Use. Alfred James Barnes, 1, Charlemont Street (corner of Harcourt Road), Dublin; Dispensing Apothecary.—November 1, 1901.

Kimmol. A device, including a figure of a goat and signature, 242,049 A Medicine for Human Use. David King Morgan, 25, King Street, Carmarthen, South Wales; Chemist.—November 18, 1901. "The essential Particulars of the Trade Mark are the following: The word 'Kimmol,' the device, and the signature, and I disclaim any right to the exclusive use of the added matter."

Remoids.—242,277. Chemical Substances Prepared for Use in Medicine and Pharmacy. Bishop and Vincent, also trading as Bishop's Pure Drug Co., 460, Holloway Road, London, N.; Chemists and Druggists.—November 27, 1901.

Puritan.—243,013. Chemical Substances Prepared for Use in Medicine and Pharmacy. Christopher Thomas and Bros., Limited, Broad Plain Soap Works, Bristol; Manufacturers.—January 1, 1902.

Glycoid.—243,122. Chemical Substances Prepared for Use in Medicine and Pharmacy. Allen and Hanburys, Limited, Plough Court, 37, Lombard Street, London, E.C.; Wholesale Chemists and Druggists.—January 7, 1902. No claim is made to the exclusive use of the word "Glyco."

Class 48.

Ino.—242,489. Perfumery (including Toilet Articles, Preparations for the Teeth and Hair, and Perfumed Soap). Gerard Bros., Limited, the Soap Works, New Basford, Nottingham; Soap Manufacturers.—December 5, 1901.

COMPANY INTELLIGENCE.

Borax Consolidated, Limited.—The profits of this company for the past year are £258,021, an amount which, looking to the increased price of coal and other materials over that of the previous year, is considered very satisfactory. The sum of £15,000 has been placed to depreciation reserve account, and £5,825 to the credit of the debenture stock redemption sinking fund. The directors propose to pay a final dividend of

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*Any objection to the registration of an application for the registration of a trade mark must be stated on Trade Mark Form J, obtainable at any money order office, price one shilling. Such objection must be lodged with the Comptroller within a month of the date given above.

£1 per share on the ordinary shares, making 17½ per cent. for the year; to place to general reserve, £30,000; to write off expenditure on inspection and development of properties, £8,843; and to carry forward to the next account, £15,794.

Hull Chemical Works, Limited.—Registered on January 22, with a capital of £5,000, in £1 shares, to acquire the business of a manufacturing chemist carried on by G. C. Robinson at Kingston-upon-Hull as the Hull Chemical Works, and to carry on the business of manufacturing chemists and druggists and manufacturers of the vendor's specialities. No initial public issue. The first directors (to number not less than three) are W. Wheatley, G. C. Robinson (manager), and J. Fawcett. Qualification, £100. Remuneration as fixed by the company. Registered office, 94, Cumberland Street, Kingston-upon-Hull.

Universal Chemical Manufacturing and Export Company, Limited.—Registered January 23, with a capital of £4,000 in £1 shares, to adopt an agreement, made on May 23, 1901, between H. E. Stubbs and O. J. Broederland, and to carry on business as chemical manufacturers, druggists, drysalters, etc., dealers in fats, oils, medicines, powders, etc., for the treatment of live stock. No initial public issue. Registered office, 12 and 13, Cleveland Square, Liverpool.

MISCELLANEOUS AND LATE NEWS.

Readers are requested to send items of local news of general pharmaceutical interest. When newspapers are sent, the passages of interest should be marked.

The Kinninmont Prize.—The examination for this annual prize will be held in Glasgow in May or June. The examination is a written one, and the subjects are botany, magnetism, and electricity. Assistants in Glasgow and the counties of Argyle, Ayr, Bute, Dumbarton, Dumfries, Kirkcudbright, Lanark, Renfrew, and Wigtown, who have qualified two years previous to the examination will be eligible to compete. Assistants who have served their apprenticeship in these districts, but have removed outside the radius within twelve months of the examination, will also be eligible. Intending competitors should send in their names to the Secretary, Mr. W. L. Currie, 223, Byres Road, Dowanhill, Glasgow.

Drugging of Horses by Farm Lads.—A correspondent of the *Yorkshire Daily Post* writes to defend chemists against the charge of supplying poisonous drugs and chemicals to farm lads. He says: "My experience of chemists is that they are most careful in selling vegetable and mineral poisons. There is a class of men who convey these dangerous compounds, and sell these lads the most poisonous receipts. These pedlars who frequent the Wolds can more readily procure drugs and dispose of them without detection. The practice is old, and is not confined to our county. The boys have no evil intention, but each is anxious to have the best looking team when livering day comes, or a necessary visit has to be made to the nearest market town. The boys are better educated now than they were a few years ago, and I think if the agricultural clubs were to have during the winter months lectures delivered on the management of agricultural horses at suitable centres by some experienced veterinary considerable good would be the result, and by this means sound teaching would remove destructive ignorance."

PERSONALITIES, BUSINESS CHANGES, ETC.

Notices of business changes, etc., should be sent by Divisional Secretaries or the persons interested, and will then be inserted free.

Bros. D. H. Oxen and C. J. Wain, chemists, at the annual installation of the Sutherland Lodge of Unity, No. 460, of Freemasons, held on Friday, January 24, at Newcastle-under-Lyme, were installed S.W. and J.D. respectively.

Mr. James Clark, who was one of the original members of the Aberdeen Junior Pharmaceutical Association, has obtained an appointment with Messrs. Burroughs, Wellcome, and Co., and prior to his departure for London he is to be entertained at dinner by the Aberdeen Pharmaceutical Association.

SOCIETY AND ASSOCIATION NEWS.

Nottingham Chemists' Association.—At a meeting of this Association, held on Wednesday, January 29, Mr. A. E. Beilby delivered a very interesting lecture on "Old Belgian Cities." Mr. A. Eberlin occupied the chair.

Manchester Pharmaceutical Association.—A special meeting of this Association was held on Wednesday, January 29, Mr. G. S. Woolley in the chair, when Mr. James Grier read a paper on "Pharmaceutical Education." An animated discussion followed, a report of which will be published next week.

Sheffield Pharmaceutical and Chemical Society.—A meeting was held on Wednesday, January 29, to consider the subjects referred to in the Federation circular, and a letter was read from Mr. G. T. W. Newsholme, dealing with pharmaceutical education. A report of the meeting is held over.

Huddersfield and District Chemists' Association.—We are requested to state that the dinner of this Association, arranged to be held on Wednesday next, February 5, has been postponed to February 26, to suit the convenience of some of the guests. It is hoped that on the latter date the Association will have the honour of entertaining the President of the Pharmaceutical Society, Mr. G. T. W. Newsholme, Mr. W. S. Glyn-Jones, and others.

Bradford Chemists' Association.—The fortnightly gathering of this Association, held on Tuesday, January 28, was set apart for the purpose of a musical evening, and, though the weather was very unfavourable, about twenty-five members and lady friends attended at the Café Royal, Darley Street. The chair was taken by Mr. J. M. Newbould, and the music was provided by Miss Barbour, a capable singer; the President of the Association (Mr. Arthur Hanson), who proved very acceptable both as vocalist and pianist; Mr. James Hanson, a violinist of creditable powers, and Mr. Stott, the organist and pianist of the Festival Choral Society. A most enjoyable evening was spent, and hearty thanks were awarded to the musicians at the close of the programme.

Society of Chemical Industry.—A meeting of the Yorkshire Section was held on January 27, at the Queen's Hotel, Leeds, Mr. T. Fairley in the chair. Mr. F. Austyn Blockley read a paper on "Analyses of Some New Tanning Materials." Probably the most interesting section of the paper dealt with the Australian wattle barks, some of which, he said, contained as much as 50 per cent. of tanning matter. African wattles were weaker in that respect, containing about 30 per cent., or in exceptional cases 35 per cent. The samples of Indian tanning materials exhibited by Mr. Blockley comprised, amongst other things, pods and galls, the latter having high tanning properties. A paper on "The Fastness to Light of Aniline Dyed Leathers," by Mr. Chas. Lamb, was read, in the absence of the author, by Professor H. R. Procter. Cordial votes of thanks were subsequently passed to the authors of both papers.

TRADE NOTES AND NOVELTIES.

Electrical Goods, Etc.—Mr. Archibald J. Wright, 318, Upper Street, London, N., is issuing a new edition of his "Novelty" list, which is about one-third larger than formerly, and includes particulars of several new electrical goods, mechanical novelties, etc. Chemists who are interested in this class of business should send for a copy of the list, the prices in which are worthy of note.

Ophthalmic Tabloids.—Messrs. Burroughs Wellcome and Co. point out that ophthalmic tabloids possess obvious advantages over old-fashioned methods of ophthalmic medication. They are designed to avoid the objections attendant upon the use of stock solutions which are apt to decompose. Ophthalmic (x), atropine sulphate tabloids, gr. 1/600 (0·00018 Gm.), constitute the latest addition to the firm's list. Being immediately soluble upon the conjunctiva and of high therapeutic efficiency, these tabloids should be found of great service to the physician. They are issued in tubes containing 25.

MARKET REPORT.

London, Thursday, January 30, 1902.

Business in Drugs and Chemicals, as also generally, has again been wretchedly bad, the general cry being that "there is nothing doing." With the exception of a rumoured further reduction in price of Salicylates, there have been no very important changes in values since our last report, the tendency of many prices remains, however, distinctly depressed, with, in many cases, a continually increasing downward tendency. Quinine on the whole fairly maintains its value, as also do Cod Liver Oil and Glycerin, especially as regards the crude article. Acid Carbolic appears to have about touched bottom. Menthol and Thymol are tending downwards, especially the latter. Sulphonal continues depressed. Same applies to Phenacetin, Salicylates, Salol, and Antifebrine. Bromides are firm. Camphor steady. Iodides unchanged as far as the combined makers are concerned. Camphor steady. Quicksilver and Mercurials maintain their value. Acid Citric, Acid Tartaric dull. Cream of Tartar quiet. Bank rate was reduced last week from 4 to 3½ per cent. Below we give some prices actually ruling for some articles of chief interest:—

ACID CARBOLIC—Is steady on basis of 6½d. to 7d. per lb., according to quantity and make for the 34-35° ice crystal in large bulk packing.

ACID CITRIC—Is steady at 1s. 1d. per lb. for crystals in 5 cwt. casks.

ACID OXALIC—Steady at 2½d. to 2¾d. per lb., nett, free delivered London.

ACID TARTARIC.—English is quoted 11¼d. to 11½d. per lb. on the spot and foreign 10½d. per lb.

ALUM.—Lump £5 10s. to £5 12s. 6d., and ground £6.

ARSENIC.—Powder is now quoted 16s. 6d. to 17s. 6d. per cwt., according to quantity, etc.

BENZOLE—Quiet. 50 per cent. prompt 8½d. to 9d., 90 per cent. 10d. to 10½d.

BICHROMATE OF POTASH.—3d.

BICHROMATE OF SODA.—2¼d.

BLEACHING POWDER (CHLORIDE OF LIME).—English make is still quoted £7 5s. per ton.

BROMIDES—Are in good demand, at steady unchanged prices, viz., 1s. 11½d. per lb. for potassii bromid., 2s. 2½d. per lb. for sodii bromid, 2s. 3d. per lb. for ammon. bromid. Bromine is also unchanged at 2s. 2d. per lb. for case lots.

CAMPHOR—English makers' price for Bells and Flowers is unchanged at 2s. 2½d. per lb.

CINCHONA BARK.—For the opening Dutch auctions for the year in Amsterdam on 23rd inst., the record quantity of 9,471 packages, with a quinine contents of 43,300 kilos, was brought forward, against 9,079 packages at the closing sale last year and 7,487 packages at the corresponding auctions a year ago. Considering the large offerings, the result obtained, viz., an average unit of 7·45 cents., must be considered a satisfactory one: this compares with 7·65 cents at the previous sale, being a decline of 2½ per cent., and 7·25 cents at the corresponding sale last year.

COCAINE.—Price steady at late reduction to 17s. 9d. to 18s. 3d. per oz. for the Hydrochlorate in 25 oz. tins, according to quantity, and 2s. 9d. per oz. more for pure alkaloid.

CODEINE—Firm, at 12s. 3d. per oz. for the pure Alkaloid. It is thought that price may very likely be again advanced before very long.

COPPER SULPHATE—Is rather better at £18 10s. to £19 10s. per ton according to quantity and brand.

CREAM OF TARTAR—Continues quiet at 71s. per cwt. for first white crystals on the spot; powder, 73s.; ditto foreign, 98 per cent., 75s. 6d. to 76s. per cwt.

GLYCERIN.—Crude has continued to advance, and £30 to £31 per ton has been paid for Crude from Soap Lees, while Candle Crude is quoted £37; the refined article remains, however, unchanged at 63s. to 65s. per cwt., according to quantity, for the best white odourless double distilled 1260 SG quality in tins and cases.

HYPOPHOSPHITES.—So far English makers have not reduced price, contenting themselves with assuring their regular buyers that they were prepared to meet any competition.

IODIDES.—Convention makers still quote Potassii. Iodid. 8s. 9d. per lb., other Iodide preparations being also unchanged.

MENTHOL—Is tending downwards. Our readers should only buy strictly from hand to mouth. Quotations are nominally 14s. to 14s. 6d. per lb. for Kobayashi brand, in 5 lb. tins (12 × 5 lb. tins in a case).

MERCURIALS—Are firm at unchanged prices, viz., 3s. 0½d. per lb. for calomels, 2s. 8½d. per lb. for corrosive sublimate, and 3s. 4½d. per lb. for red precipitate.

MORPHINE.—Makers quote 4s. 5d. to 4s. 7d. per oz. for the Hydrochlorate powder, and 2d. more for the Crystalline salt, stating, however, that these prices show no profit on present cost of opium.

NITRATE OF SODA.—The commercial article is quoted £10 2s. 6d. and refined £10 5s. per ton.

NITRATE OF POTASH (SALTPETRE).—Best German refined is quoted £20 10s. to £20 15s. per ton, according to quantity, for large casks.

OILS (FIXED) AND SPIRITS.—Linseed Oil steady spot, firm forward. London, spot, pipes, £29 10s.; barrels, £29 10s.; month, £29 5s.; February-April, £29 5s.; May-August, £29 to £29 5s. Hull, spot, naked, £28 10s.; February-April, £28; May-August, £28. Rape Oil steady. Ordinary Brown, on the spot, barrels, £26 to £26 5s.; January-April, £26 5s. English Refined, spot, £27 5s. Ravison, naked, spot, £24; January-April quoted £24 5s. to £24 10s. Cotton Oil steady. London Crude, spot, £22; February-April, £22 5s. Refined, spot, £23 10s. to £24 10s. Hull, naked, Refined, spot, £21 12s. 6d; February-April, £21 15s.; May-August, £22 10s. Crude, spot, £20 10s.; February-April, £20 10s.; May-August, £21 5s. Olive Oil: Mogador, £34; Spanish, £35 to £38, as to quality; Levant, £34 to £35. Cocoanut Oil easier. Ceylon, spot, £33 10s.; February-April, £31 15s., c.i.f. Cochin, spot, £37; February-March, £34, c.i.f.; February-April, £33 15s., c.i.f.; March-May, £33 10s., c.i.f. Palm Oil: Lagos, on the spot, £27 10s. Turpentine, though slow, is decidedly steadier inclined. American, spot, 29s. 3d. to 29s. 6d.; February-April, 29s. 6d.; May-August, 29s. 9d. to 30s.; September-December, 30s. 3d. to 30s. 6d. Petroleum Oil dull. Russian, spot, quoted 5⅞d. to 6⅜d. American, spot, 6⅞d. to 7d.; Water White, 7⅛d. to 8d. Refined Roumanian, on spot, 5¾d. Petroleum Spirit: Ordinary American, 8d.; deodorised, 8¼d.

OPIUM—Is practically without change in value, the tendency being if anything rather in the upward direction, on unfavourable reports as to prospects of new crop.

PARALDEHYDE.—One German maker has reduced his list price to 2s. 6d. per lb. for quantity. Other makers are no doubt following suit, so that the maker in question will hardly gain much advantage by the unnecessary knocking down of price to which he is so freely addicted.

PHENACETIN.—Combined makers still quote 4s. 3d. to 4s. 9d. per lb., according to quantity, for both crystals and powder.

QUICKSILVER—Is unchanged at £8 15s. per bottle from the importer.

QUININE.—Makers still quote the Sulphate 1s. 2d. per oz. for 1,000 oz. lots in 100-oz. tins, while in the speculative market quotations are nominal at 1s. 1¼d. per oz. for spot, and 1s. 1½d. to 1s. 1¾d. per oz. for forward delivery, for B&S and/or Brunswick Sulphate.

PRUSSIATE OF POTASH.—English makes 5⅜d. to 5½d. Beckton 5¼d.

SHELLAC.—The Calcutta price of TN Orange is cabled unchanged at 64 rupees. The market remains dull. On the spot there is rather more inquiry for fine Second Orange, with sales of about 150 cases AA in circle at 125s., but other descriptions are slow of sale, fair TN being quoted 120s. cash terms. Futures are again easier, and a fair business has been done at the decline:—

Call Prices.	Sellers.	Buyers.
February .... TN	122s. 6d.	0s. 0d.
March	123s. 6d.	120s. 0d.
April	124s. 0d.	121s. 0d.
May	125s. 0d.	122s. 6d.
June	126s. 0d.	123s. 0d.

The sales comprise about 1,000 cases, March delivery at 122s. to 121s., May at 123s., June at 125s. to 124s.

SULPHONAL is quiet and unchanged, makers quoting 5s. per lb. for both powder and crystals, for quantity and in bulk packing.

SULPHATE OF AMMONIA—Steady. Grey 24 per cent. London prompt £11 7s. 6d. Hull prompt £11 5s. to £11 6s. 3d. Leith prompt £11 8s. 9d. Beckton Jan.-June £11 10s. Beckton terms prompt £11 6s. 3d.

The "Digestion Difficulty" Solved by

Mazawattee Cocoa

A 9d. Tin of which goes as far as a 1/6 Tin of ordinary cocoas

Forms a Light, Nourishing, Food, easily digested, and is an

UNEQUALLED SUPPER BEVERAGE.

To be obtained Everywhere.

Write for FREE Sample to Mazawattee, London.

DISSOLVED HAEMOGLOBIN CAPSULOIDS

THE LANCET of August 11th, 1899, says:—

"The administration of Iron in this form is satisfactory. To not a few the appearance of Haemoglobin is repulsive. Capsuloids meet this objection, and evident care is devoted to their preparation."

CAPSULOIDS are so largely prescribed by Physicians

BECAUSE—They contain only pure dissolved Haemoglobin scientifically extracted from carefully selected fresh blood.

BECAUSE—They never produce the slightest nausea, like most Haemoglobin mixtures and powders, are pleasing to the eye, and easily swallowed even by young children, and furnish exact doses.

BECAUSE—Anæmia and chlorosis, and all similar conditions of blood, are rapidly cured by taking them.

Capsuloids are sold in boxes for dispensing only.

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LONDON, E.C.

Every Description always on hand.

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

Gerald Edward Coleman and Walter Lee Spink, surgeons, apothecaries, and accoucheurs, Hemsworth and Barnsley. Debts will be received and paid by G. E. Coleman, who will continue the practice.

William Harling Sissons and William George Loveridge, physicians and surgeons, Barton-on-Humber. Debts will be received and paid by W. G. Loveridge.

Joseph Whitehead, Robert Whitehead, and George Albert Whitehead, chemical manufacturers, Clayton, Manchester. Debts will be received and paid by R. Whitehead, who will continue the business in the name of George Whitehead.

DIARY OF THE WEEK.

Monday, February 3.

Royal Institution, Albemarle Street, Piccadilly, W., at 5 p.m.—General Monthly Meeting.

School of Pharmacy, Royal Venetian Chamber, Holborn Restaurant, at 7 p.m.—Annual Dinner.

Society of Chemical Industry, Burlington House, Piccadilly, W., at 8 p.m.—"The Explosion of Potassium Chlorate by Heat," by Dr. A. Dupré; "The New Table Photometer and Standard Pentane Burner, prescribed by the Gas Referees for use in the London Gas-testing Stations," by Dr. F. Clowes.

Tuesday, February 4.

Pharmaceutical Society, 17, Bloomsbury Square, London.—Finance and Other Committees.

Royal Institution, Albemarle Street, Piccadilly, W., at 3 p.m.—'The Cell; Its Means of Offence and Defence. Immunity." (Lecture IV.), By Dr. Allan Macfadyen.

Wednesday, February 5.

Pharmaceutical Society, 17, Bloomsbury Square, London, at 11 a.m. —Meeting of Council.

Pharmaceutical Society of Ireland, 67, Lower Mount Street, Dublin, at 3 p.m.—Meeting of Council.

Chemists' Managers' and Assistants' Society, Horse Shoe Hotel, Tottenham Court Road, London, at 9.30 p.m.—Meeting of Council.

Young Chemists' Association, Working Men's Club, Gallowgate, Newcastle-on-Tyne, at 8.15 p.m.—"Pharmaceutical Processes," by G. F. Merson.

Thursday, February 6.

Chemical Society, Burlington House, Piccadilly, W., at 8 p.m.—Ordinary Meeting.

Chemists' Assistants' Association, 73, Newman Street, London, W., at 8.30 p.m.—Impromptu Discussion.

Halifax and District Chemists' Association, Old Cock Hotel.—Annual Dinner.

Linnean Society of London, Burlington House, Piccadilly, W., at 8 p.m. —"A Method of Investigating the Gravitational Sensitiveness of the Root-tip," by F. Darwin; "An Extinct Family of Ferns," by Dr. H. Scott.

Midland Pharmaceutical Association, The University, Birmingham.—"Radiography," by Dr. Hall-Edwards.

Saturday, February 8.

Inter-Pharmacy Football League.—Muter's *v.* Metropolitan College.

Pharmaceutical Football Club.—(Square) *v.* Hampstead.

Notices to Correspondents.

All Communications for the 'Pharmaceutical Journal' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street, Lincoln's Inn, London.

Contributions sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

Correspondents should write in ink, on one side of the paper only, and must authenticate the matter sent with their names and addresses, though not necessarily for publication. No notice can be taken of anonymous communications.

Drawings for Illustrations should be executed twice the desired size, clean sharp lines being drawn with a pen and liquid Chinese ink. Shading by washes is inadmissible. Photographs can be utilised in certain cases.

Names and Formulæ should be written with extra care, all systematic names of plants and animals being underlined, and capital letters used to commence generic but not specific names.

Reprints of Articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Bailey, Bartlett, Beaton, Coleman, Coull, Currie, Dawson, Drayton, Duff, Field, Fielding, Fletcher, Forret, Hill, Holding, Johnson, Ling, Lownsbrough, Marrett, Pollard, Reid, Sanders, Shuttleworth, Stiles, Usher, Vallance, Vincent, Woolcock.

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Members of the Pharmaceutical Society must address all communications with reference to the transmission of the Journal, to the Secretary, 17, Bloomsbury Square, London, W.C.

LONDON: SATURDAY, FEBRUARY 1, 1902.

ANNOTATIONS.

THE REGISTRAR'S REPORT for 1901, which will be presented to the Council of the Pharmaceutical Society next week, shows a slight increase in the membership of the Society at the close of the year, but there is again a considerable diminution in the number of student-associates, the figures for the past five years being as given in the following table:—

Subscribers.	1897.	1898.	1899.	1900.	1901.
Registered Chemists..	4,775	4,840	5,820	5,832	5,850
Students	873	866	884	796	742
Total	5,648	5,706	6,704	6,628	6 592

As in former years, there was a considerable addition to the list of members during the past year, but the losses by death and secession increased in an almost equal proportion, so that the net increment was only eighteen members. With regard to the number of student-associates, as was pointed out a year ago, it was almost inevitable that the total should be diminished after the abolition of the Society's First Examination, since the opportunity afforded the Registrar—by the entries for that examination providing a record of those entering pharmacy as pupils—of bringing under notice the advantages of being connected with the Society, does not now present itself. The names and addresses of apprentices are not now known, as a rule, and it is therefore not possible for the Registrar to communicate with them and induce them to join the Society. He has no direct knowledge of the existence of the vast majority of pharmacists' apprentices until they give notice of their intention of presenting themselves for the Minor Examination, and, as a consequence, the number of student-associates tends to become steadily less year by year. What the Registrar is unable to do, however, may be accomplished by the Society's Divisional Secretaries and members generally, and it should not be too much to expect endeavours to be made locally to induce all apprentices who are not at present connected with the Pharmaceutical Society to join that body as student-associates.

THE NUMBER OF ADDITIONAL MEMBERS elected at the January meeting of the Council was not so great as at the corresponding period of last year, and on adding them to those included in the Registrar's Report, the actual membership of the Society at the present time is seen to be but seven more than it was twelve months ago, as is shown by the following tabular statement which, like the previous one, covers a period of five years:—

Subscribers.	1898.	1899.	1900.	1901.	1902.
Registered Chemists..	4,864	5,166	5,906	5,930	5,937
Students	974	1,007	941	917	785
Total	5,838	6,173	6,847	6,847	6,722

It is apparent that, on this occasion, the considerable falling off in the number of student-associates is not compensated for by the addition of an equal number of members, as was the case a year ago, but as the members constitute the real backbone of the Society, there is as yet no cause for serious discouragement with regard to the numerical strength of the body corporate. Nevertheless, there is no reason why efforts should not be made by Divisional Secretaries and others, on the lines already suggested, to recruit the ranks of the Society from young workers at the craft.

THE PROPORTION OF REGISTERED CHEMISTS who are members of the Society has never been what it ought to be, but it is increasing steadily, and it is satisfactory to find that the proportion was much greater at the end of last year than it was a year previously, as the following table shows:—

Registered Chemists.	1897.	1898.	1899.	1900.	1901.
Members	4,775	4,840	5,820	5,832	5,850
Non-Members..........	10,440	10,633	9,775	10,031	9,750
Total	15,215	15,473	15,595	15,863	15,600

Whilst the net additions to membership of the Society during the twelve months number eighteen only, there are now two hundred and sixty-three fewer names on the Register of Chemists and Druggists, so that, while there are now less than ten thousand registered chemists outside the pale of the Pharmaceutical Society, the number of members is both actually and proportionately greater than at any previous period. The diminution in the number of names on the Register is probably due to the greater efficacy of the purging process to which the lists are now subjected by the Registrar and his staff. But, be that as it may, it is a noteworthy fact that, at the end of 1901, there were apparently fifty-six pharmaceutical chemists short of the total recorded twelve months earlier, while the list of chemists and druggists had shrunk to the extent of two hundred and seven names. The total number of persons registered under the Pharmacy Acts on December 31, 1901, was almost identical with the number recorded for December 31, 1899, but whether it is to be understood that the high-water mark was recorded by the Registrar under the Acts at the end of 1900 remains to be proved.

THE VALUE OF SCIENTIFIC WITNESSES in legal cases must, naturally, depend upon a variety of circumstances, and Mr. Shiel's suggestion (see *ante*, p. 74) that it is possible to get any number of experts on either side by paying their fees may appear to him to be justified by his own experience on the bench. The learned magistrate was perhaps hardly justified in stating that any number of scientific gentlemen will swear one thing, and an equal number swear to the contrary, if retained for that purpose, but it is unquestionable that there is a tendency for expert evidence to become much too cheap nowadays. It must be borne in mind, in considering this question, that so-called experts are not always properly conversant with the subjects concerning which their evidence is required. An analyst who gives evidence in a case under the Sale of Food and Drugs Act may be a competent chemist and yet not fitted to be an expert witness in that particular case. For example, as a rule, but few public analysts are competent to discuss points regarding substances used for medicinal purposes. They frequently lack the training necessary to enable them to discriminate fairly between cases of wilful sophistication and changes due to natural causes. Moreover, they are often ignorant of what is really injurious to health, and are also apt to assume without sufficient reason that certain harmless conditions tend to the prejudice of the purchaser. In such instances the evidence of supposed "expert" witnesses may become that of non-expert laymen, and it is then not so surprising to find professional chemists, engaged on opposite sides in a law-suit, confidently giving expression to opinions which appear diametrically opposed. The word "appear" is used advisedly here, because the contradiction in such instances is sometimes more apparent than real, and it is often favoured by the inability of magistrates and judges to appreciate the value of evidence as to technical or scientific matters.

THE SUBJECT OF SCIENCE SCHOLARSHIPS was dealt with at the Conference of Public School Science Masters, recently held at South Kensington, in a paper by Mr. M. D. Hill, of Eton School, in which the author discussed the connection between university scholarships and school work in science. Mr. Hill is dissatisfied with the present methods of conducting scholarship examinations, because they tend towards early specialisation. He is of opinion that specialisation, except of the mildest kind, is highly undesirable before boys reach the age of eighteen, and suggests that it is such specialisation in the classics that is responsible for much that is now being deplored in regard to educational matters. At the same time, he thinks that if science is to become our only method of education, even under the ægis of Professor Armstrong, almost as great evils will be the result. In most schools boys are supposed to be taught three branches of knowledge, which may be roughly classed as literature, mathematics, and science, and if specialisation is to be avoided by competitors for scholarships, it can only be done by the colleges setting elementary papers which embrace those three subjects and shall be compulsory on all candidates. Further, it is suggested that each candidate might be asked to declare his intention of eventually reading for honours in classics, or mathematics, or science, and take a more advanced paper in the subject selected. If something of that kind were initiated by the Universities, Mr. Hill believes the benefits would be great, not only to science teaching, but also to public school education as a whole. It might, he thinks, open the eyes of some schoolmasters to the fact that science had been recognised by the world at large as a necessary item in education, and it would ensure every boy learning science for some four or five years of his life, while the possibility of making science his life's business would be opened up to even the ablest boys, whereas—it is alleged—it is only the intellectual refuse, outside the Army class, who at present are allowed to devote their energies to the study of science, at least in one great public school. Finally, it was said to be hopeless for schoolmasters to insist on the value of science as a mental training and to urge its wider inclusion in school curricula if the old Universities maintain their present attitude.

THE NATIONAL PHYSICAL LABORATORY is to receive the apparatus erected by the late Principal Viriamu Jones at University College, Cardiff, for the purpose of determining the fundamental unit of electrical resistance. The method of determination adopted by Principal Jones was a modification of the Lorenz method, and he spent £400 on the machine which he erected. Improvement of the apparatus seemed to be possible, however, and in 1898 the Drapers' Company, in recognition of the inventor's services to science and education, voted the sum of £700 for the construction of a more perfect apparatus, which will now be set up, as Principal Jones intended should be the case, at the National Physical Laboratory. The apparatus is to be erected under the supervision of Professor Ayrton, F.R.S., and the director, a tablet being affixed stating that the machine was presented by the Drapers' Company in memory of Principal Viriamu Jones, and in recognition of his great scientific attainments.

THE PROBLEMS OF THE FUTURE, concerning which Mr. H. G. Wells has probably written as much as anyone, not even excluding Jules Verne, has now emerged from the stage of romance and become the subject of anticipations submitted by the former writer to a Royal Institution audience. The average reader of 'The Time Machine,' 'The Island of Dr. Moreau,' 'The War of the Worlds,' and the rest of Mr. Wells's highly interesting works of imagination, is usually unaware that the author claims a scientific basis for his peeps into the future, but, since there is not the least doubt that the plausibility with which he has written is well justified, it is not surprising to find that Mr. Wells has been able to keep even a Royal Institution audience deeply interested and entertained for an hour while he explained his theories for constructing the future, and that too in the absence of any subsidiary attractions in the way of limelight pictures. He pointed out that, subject to certain limitations, a knowledge of the future is becoming a human possibility, and though, of necessity, the individual future cannot be foretold, the probable future of humanity as a whole may be explored with some certainty. Science aims at prophecy, and Mr. Wells thinks it is possible to understand something of the future destinies of the race in the same way, by a similar form of reasoning to that of the geological past, which has been built up within the last hundred years.

MOST OF US LIVE IN THE PAST, observed Mr. Wells, though we differ from the Chinese in that respect because we are distinctly aware of the future. Man, in fact, has acquired the habit of going to the past because it offers the line of least resistance. Many people believe that the future is utterly uncertain, and that we can know no more about the future than we know which way a kitten will jump next. But, though that was doubtless quite true of the man of Shakespeare's time, whose knowledge of the past was bounded by the Biblical theory of the Creation, science has changed all that, and we now have a new kind of knowledge obtained in a new kind of way. We know of animals and scenery, the actual forms of which no human eye has ever seen, that being the product of a more critical way of looking at things—the process of induction. In the same way, according to Mr. Wells, it may be possible to throw a searchlight forward instead of backward, such as will discover things as clear and as universally convincing, and far more important to mankind. He believes quite firmly that it is possible, and that the time is coming, when as much brain labour will be given to the exploration of the future as has been expended upon the laws of chemical combination in the past century. The essential thing is not the collection of facts, but the analysis of facts. Science deals with the future largely even now—in medicine, which is concerned with prognosis, in meteorology, which constantly aims at prophecy, and even in pure mathematics. Until the factor man came in, the inductive future was as real and certain as the inductive past, but though man has changed the nature of the problem, it would appear that he has only modified and not altered the calculation, and that even great men, such as Julius Cæsar, Napoleon, Lord Rosebery, and Robert Burns are but symbols of the forces behind them. To conclude, Mr. Wells is of opinion that mankind is in a phase of rapid development, at the beginning of the greatest change humanity has ever undergone.

Mr. Alfred William Bennett, M.A., B.Sc., Lecturer on Botany at St. Thomas's Hospital Medical School, died suddenly from heart disease on January 23, being attacked by syncope while riding on an omnibus. He was best probably known to readers of the Journal by contributions which, though unsigned, were none the less valuable, the more important botanical abstracts which have appeared in these columns for many years past having been prepared by him. He was born at Clapham, in 1833, and was educated at University College, London. Mr. Bennett's first important botanical work was undertaken when, in conjunction with Mr. Thiselton Dyer, he edited the English edition of Sach's 'Text-book of Botany,' 1875; he also prepared an English translation of Thomé's 'Text-book of Structural and Physiological Botany,' and in 1889 he published, in conjunction with Mr. G. Murray, a valuable 'Handbook of Cryptogamic Botany,' but, according to the *Times*, his most popular work was a 'Flora of the Alps,' which appeared about seven years ago. Mr. Bennett was a Fellow and ex-Vice-President of the Linnean Society and a Fellow and former Vice-President of the Royal Microscopical Society, the Journal of the latter society being edited by him. He was also a frequent contributor to the journals and proceedings of several scientific societies, and was a popular lecturer on botanical subjects, as well as an examiner in botany to the University of Wales.

Sir John Lawes' Memory is to be kept green by a handsome tablet which is about to be placed in Harpenden (Herts) Parish Church. The memorial tablet will bear the following inscription:—"In affectionate memory of Sir John Bennet Lawes, Bart., F.R.S., born at Rothamsted, December 28, 1814; died at Rothamsted, August 31, 1900. He used his long life and his great knowledge and experience as an agricultural chemist and as a practical and scientific farmer in the pursuit of truth, and for the benefit of his fellow-men in his own country and in all parts of the world. This tablet is erected by the parishioners of Harpenden and others who deeply feel his loss as an example and friend."

"Beer" and "Arsenic," when coupled together, easily create a scare, observes a writer in the *Sheffield Daily Telegraph*, who comments upon the evidence given at the inquest recently held at Halifax (see *ante*, p. 53) in a case of supposed poisoning by arsenical beer. It appears that Mr. A. H. Allen, of Sheffield, the West Riding Analyst, discovered appreciable traces of arsenic in three samples of beer obtained by the coroner's officer in Halifax, and also found extremely minute traces of arsenic in the viscera of the deceased, but he was of opinion that the poison present had no definite connection with the hawker's death. That opinion was supported by the evidence of the medical man who made the post-mortem examination, his view being that death was due to bronchitis and pneumonia, and not to arsenical poisoning. In the circumstances, therefore, the only possible verdict was one of "Death from natural causes," and Halifax beer-drinkers may breathe again.

The Cultivation and Cure of Vanilla in Seychelles are referred to in an interesting report by Messrs. Brookes and Green, of Mincing Lane, who state that the vanilla industry has been most successful in the island, and that Seychelles vanilla is superior as regards quality and value to all except Mexican vanilla. The island possesses a magnificent harbour, and the climate is very healthy, but owners of vanilla gardens have anxious times, a prolonged drought interfering most seriously with successful flowering, while between that period and fructescence the plants are frequently damaged by gales of wind, so that plantations which gave early promise of a good crop finally yield but a poor result. When ripe and ready for harvesting the beans are in a green, damp condition, and the process of curing and preparing the vanilla for shipment to London requires much care and attention, any parcels packed too damp (immaturely cured) almost invariably contracting "mould" on the voyage, and the value being thus largely reduced. The crop for 1901, shipped during the months of August to December, totalled "fully double" the heaviest quantity exported from Seychelles in any previous season, and the present season's crop will probably reach the important quantity of about eighty tons.

The Striking Feature of this season's supply of vanilla from Seychelles is said to be the unprecedented large proportion of "short" beans; medium to good size quality measure from six to eight inches, but the consignments landed in London during the past three months have contained about 75 per cent. of very short beans ranging from three to five inches. The result has been that whilst long-length quality has fairly maintained previous values, the short measurements show a reduction of about 50 per cent. To obtain good plump vanilla pods, observe Messrs. Brookes and Green, it is incumbent for planters to see that the young shoots are thinned early in the season by pricking out a quantity of surplus sprouts, but in the present case it would seem as though nearly all had been allowed to germinate; that view is said to be somewhat confirmed by recent reports from Seychelles, which advise that the flowering for the next crop is small, possibly due to the weakening of the vines last year; indeed, some of the older plants are reported as seriously exhausted—a very natural result if the above surmise is true. It is also stated that during the past year or two there has been an increasing "doubtful trade" carried on by crystallising Tahiti vanilla and making it up in bundles to represent Bourbon and other better-class qualities, buyers paying twice as much as their actual value, or even more, the price charged in some instances having been nearly equal to that of Seychelles and other better qualities.

The Annual Dinner of the School of Pharmacy is to be held on Monday evening next, February 3, in the Royal Venetian Chamber of the Holborn Restaurant, London, at 7 p.m., when the Dean of the School—Professor J. Reynolds Green—will take the chair. We are informed that the function this year promises to be a great success, about a hundred and twenty tickets having been disposed of. The speeches will be interspersed with a first-rate musical programme, and the President of the Pharmaceutical Society will be the guest of the evening, while several members of the Council of the Society have promised to be present, and a large number of past students have apparently determined to take this opportunity of renewing old friendships that have been formed at the Square. The Dinner Committee consists of Messrs. H. S. Phillips (Chairman), Martin, Robinson, Stranack, Cleghorn, and Hewlett, with Messrs. J. Stuart Hills and Ernest T. Neathercoat as Honorary Secretaries.

THE SALE OF POISONS.

Inquiry by the Privy Council.

With the opening of Parliament speculation will be rife as to the possibilities and probabilities of legislative reform on a variety of subjects more or less familiar to the "man in the street." Proposals of considerable importance affecting traders, likely to be embodied in a Government Bill, relate to the sale of poisons. At present, as is generally understood, the Pharmacy Act of 1868 restricts the retailing, dispensing, or compounding of poisons to pharmaceutical chemists and druggists; but in practice this is a legal fiction, as there are many poisonous chemical preparations, used in various industries, which can be obtained from oil and colourmen, ironmongers, seedsmen, and agricultural agents; though occasional prosecutions, instituted by the Pharmaceutical Society, and proceedings for recovery of penalties taken on behalf of that body, in asserting the monopoly which it is contended the Act confers, place several classes of traders in an unenviable position. On the one hand there is no rigid enforcement of the Act; on the other there is the risk which tradesmen necessarily incur, in endeavouring to meet the demands and the convenience of their customers. In the interest of both pharmacists and traders, it seems most desirable that some legislative action should be taken to put an end to the present state of uncertainty. The monopoly which it is contended that the Act of 1868 gives to chemists and druggists is, of course, based upon consideration of the public safety, by ensuring the dispensing and sale of poisons under proper safeguards, and by properly qualified persons; but it may fairly be doubted whether the Legislature contemplated at the time they passed the measure that everybody requiring a pound of green paint, a dozen fly-papers, a bottle of disinfectant, a gallon of weed-killer, or some photographic preparations containing poison, would necessarily have to go to a chemist in order to obtain any of them. The purchaser, however, finds that the law is, in practice, full of anomalies. He may obtain one article at a colourman's, another at a grocer's, and a third at a seedsman's shop—at the respective tradesmen's risk. The Privy Council have apparently realised that some alteration in the law is required, as they have appointed a Poisons Committee to take evidence on the subject and report. This Committee is constituted of gentlemen of special scientific attainments, in whom public confidence may be safely reposed. They are:—Sir Herbert Maxwell, Bart., M.P., F.R.S. (Chairman), Mr. Alex. Cross, M.P., Professor T. E. Thorpe, C.B., F.R.S., Professor W. A. Tilden, F.R.S., Dr. Thomas Stevenson, Public Analyst, Mr. Wm. Martindale, F.C.S., and Mr. J. H. Harrison, of the Privy Council Office. The Pharmaceutical Society have presented witnesses for examination before this Committee, so also have the Traders in Poisons and Poisonous Compounds for Technical and Trade Purposes Protection Society; and several independent skilled witnesses and departmental witnesses have also been examined. The Secretary of the Scottish Chamber of Agriculture has given evidence, and several other gentlemen have yet to give their testimony. The traders, having as great concern for the public safety as the pharmacists, are willing, and indeed anxious, that their sales of articles containing poison shall be subject to proper and well-defined restrictions, and be limited to original sealed vessels or packages, as received from the manufacturers and wholesale dealers. Without attempting to anticipate the report of the Poisons Committee, it seems only reasonable, for the public convenience, that when commodities are required for agricultural, horticultural or other trade or technical purposes, persons other than chemists, if they are duly licensed, should be at liberty to supply the requirements of their customers; and it is clear that, under the conditions above mentioned, no harm would result.

The article here reprinted has been accorded prominence in the *Newcastle Daily Chronicle, Sheffield and Rotherham Independent, Aberdeen Evening Gazette, Grocers' Journal* and probably other newspapers, the conductors of which have apparently been induced to offer, as their own, expressions of opinion supplied to them ready-made by interested parties. In each case the matter appears in the form of an original article, for which, presumably, the editor of the particular organ prepared to accept responsibility.—[Ed., *Pharm. Journ.*]

REVIEWS AND NOTICES OF BOOKS.

'Food and Drugs.' By Charles James Higginson. Second Edition. Pp. 203. Price 3s. 6d. net. London: Effingham Wilson. 1902.

Only eighteen months have elapsed between the publication of the first and second editions of this useful work, which, therefore, seems to have fulfilled its promise of becoming a valuable guide to persons who are interested in the working of the Sale of Food and Drugs Acts. The first edition, by the way, was described by the author as "a manual for traders and others"; its revised and enlarged successor is termed "a manual for solicitors, public analysts, inspectors, traders, and others." All the cases have been brought up to date, and certain subjects have been treated somewhat more fully than in the first edition, though even yet the author does not deal so fully as might be desired with the relations of the Acts to the sale of drugs. At the same time, he has included notes on the bearing of the decisions in the mercury ointment case and other recent cases; he also points out that decided cases make it clear that when any compounded drug is sold according to its B.P. name it must have been prepared in accordance with the official formula for that preparation. The appendix to the work now includes the Regulations of the Board of Agriculture dealing with the question of water in milk, but, it is pointed out, no regulations have yet been issued in respect of water in butter or the use of preservatives in food. The book is thoroughly indexed, and only requires the devotion of more space to pharmaceutical needs to render it indispensable to every registered chemist.

'Lectures on Chemical Pathology.' By C. A. Herter, M.D. Pp. 461. Price 7s. 6d. London: Smith, Elder and Co. 1902.

The author of this work is professor of pathological chemistry at the University and Bellevue Medical School, New York, and he reprints here the lectures delivered by himself in that institution during the last two sessions, his object being to provide a useful work of reference for students and medical practitioners who have not been able to keep in touch with modern research in the field of chemical pathology. The leading characteristics of various physiological and pathological processes are sketched, no attempt being made to describe those processes fully or systematically, and a list of references is given at the end of each lecture, so as to put the reader on the track of the most significant literature. The first lecture deals with the chemical defences of the organism against diseases, and serves as a useful introduction to a study of the bactericidal action of the various secretions of the human body, the globulicidal action of serum, alkalescence of blood, antitoxic action of cells, etc., etc. Attention is next directed to the chief foodstuffs and their fate in the body in health and disease, the carbohydrates and fats, proteids, inorganic salts, etc., being all considered in turn. The effects of excessive fermentation and putrefaction in the digestive tract are then described, after which the author treats of the chemical pathology of gastric digestion, intestinal digestion, and hepatic disease, concluding with lectures on diabetes, starvation, under-nutrition, and obesity. The book is written in an attractive style, and may be expected to attract much attention.

POISONING CASES AND INQUESTS.

Cough Lozenges.—At Bloxwich Police Station, on January 23, the Walsall Coroner (Mr. T. H. Stanley) held an inquest respecting the death of Edward Clark, aged one year and ten months, who had been allowed to eat five "linseed, liquorice and chlorodyne" cough lozenges, which caused violent sickness, followed by death.—Dr. F. Wilson said a post-mortem examination showed the existence of intense irritation of the stomach, to which death was due, and that he considered was produced by the lozenges, each of which contained about one-twelfth of a grain of morphine.—The Coroner said the lozenges were in very common use, and that was borne out by members of the jury, who said tons of them were eaten, and that those were of a rather better class, a remark which elicited the reply that they were certainly more effective.—A verdict of "death by misadventure" was returned, the Coroner remarking that the case would no doubt act as a warning to parents to keep such things out of the reach of young children.

Laudanum.—Three cases of laudanum poisoning are reported this week. At Glencraig, Fifeshire, George Blyth, sub-postmaster, died on Friday, January 24, from an overdose of laudanum; at Newcastle-on-Tyne, on January 27, an inquest was held on the body of Jane Miller (27), who, according to the jury, died from "laudanum poisoning, accelerated by excessive drinking"; at the Military Hospital, Stoke, Devonport, on January 24, an inquest was held respecting the death of Quartermaster Sergeant McCaffery, who had purchased laudanum from three different chemists, the first of whom refused to supply more than two-pennyworth; deceased then returned to a hotel and drank the poison, but was seen with the bottle in his hand, and an emetic was immediately given. The jury found that "Deceased died from syncope and pneumonia, following opium poisoning, administered by himself, whether wilfully or accidentally there is not sufficient evidence to show."

Morphine.—At Portsmouth, on January 27, an inquest was held concerning the death of Staff-Sergeant Arthur George Hammond (40), of the Royal Army Medical Corps, Station Hospital, Portsea. The evidence showed that he had been greatly depressed, and had suffered from insomnia, and that death was due to morphine poisoning. A verdict of "death from misadventure" was returned.

Mercuric Chloride.—An inquest was held at Abercarn on Monday, January 20, on the body of Mrs. Muriel Griffiths, aged 23, who was shown to have swallowed a tablet containing mercuric chloride, while suffering from puerperal fever. The tablet had been supplied for antiseptic purposes, and deceased at the time of taking it was not responsible for her actions. A verdict in accordance with the medical evidence was returned.

Methylated Spirit.—At Wyggeston Hospital, on January 20, Mr. Harvey held an inquest on the body of Joseph Hitchcock, aged 90, an inmate of the institution, to whom a nurse had inadvertently administered methylated spirit in mistake for medicine. The nurse explained that she had been in the habit of rubbing deceased's back with methylated spirit to prevent bedsores, and had taken the bottle containing the spirit from the shelf, thinking it was the medicine bottle, poured out a table-spoonful, and gave it deceased to drink. He took it, and then said he thought she had made a mistake, and given him brandy. She turned and looked at the bottles, and found that she had given him the methylated spirit. Both bottles were the same in colour and shape, though the spirit bottle was a little smaller. The bottles were also properly labelled. Witness gave the deceased milk and cooling drinks, and reported the occurrence to Canon Vaughan, Master of the Hospital. Dr. Blakesley afterwards saw the deceased, and again later the same day, but he died the next day.—Dr. Blakesley said deceased had been suffering from dyspepsia and debility from old age, but his death was due to over-stimulation acting on an enfeebled circulation, followed by collapse caused by the dose of methylated spirit. Had deceased been a younger man the spirit would have had little ill-effect.—The Coroner having reviewed the evidence, the jury returned a verdict of "death from misadventure."

LONDON CHEMISTS' ASSOCIATION.

A meeting of this Association was held at the Holborn Viaduct Hotel, on Wednesday afternoon, January 29. It will be remembered that at the previous meeting of London chemists, called together by the Western Chemists' Association, on November 27 last, it was decided to form an association for London, and the following gentlemen were elected as a provisional Committee:—Messrs. G. P. Pond (Fleet Street, E.C.), J. C. Pentney (Dalston), R. H. Jones (Norwood), A. Pellew (Camberwell), W. M. Campbell (Shepherd's Bush), and P. Burton (Cambridge Heath).

Mr. W. S. Glyn-Jones was elected to the chair. He explained that since the meeting on November 27, the Committee had met several times and had drawn up rules which had been submitted to the Committee of the Western Chemists' Association for approval.

Mr. T. Nicholls (Hackney) suggested that the Association be called the "London Association of Pharmacists." The word "chemist," he thought, was unreliable, but the meeting decided otherwise.

Other alterations were Rule 2, Section B, to add the words "and druggists."

Considerable discussion arose over Rule 3, and it was decided to alter it to "membership of Association shall be restricted to registered chemists," etc. It was decided to have two Vice-Presidents, and Rules 5 and 6 were altered accordingly; and to the former was added "ten members shall retire annually, but shall be eligible for re-election."

In Rule 10 the words "officers" was altered to "members"; and in Rule 13 after the word "money" was added "out of the funds of the Association."

On the motion of Mr. J. C. Umney, it was decided to make an additional rule, "that at least ten days' notice be given of any annual or special meeting."

Mr. J. Hick (St. John's Wood) thought outsiders might be allowed to become honorary members; some trade question might crop up in which the wholesale trade might like to join. It was pointed out that the Committee would have power to approach outsiders if necessary.

The Chairman explained that the Provisional Committee had added to their number Messrs. W. A. Goodall (Fulham), C. J. G. Bunker (Great Dover Street, S.E.), C. Breese (Streatham), F. Truman (Old Kent Road, S.E.), and himself, making eleven in all. To these were added Messrs. S. Dawson (Knight's Hill, S.E.), J. C. Umney (Wright, Layman, and Umney), W. Lance (Islington, N.), D. White (High Street, Borough, S.E.), R. Willson (New Kent Road), C. E. Pickering (Marylebone, N.W.), and F. E. Bustard (Finsbury Park, N.).

It was suggested that some members of the W.C.A.'s Committee should also act. Mr. Philp said that the W.C.A.'s Committee could not act as such, but individual members might, and the following were added:—Messrs. H. Cracknell (Paddington, W.), J. F. Harrington (Kensington, W.), J. W. I. Philp (Notting Hill, W.), F. Andrews (Lancaster Gate, W.), A.

Cooper (South Kensington), and R. Feaver Clarke (Gravesend). It was decided that these twenty-five gentlemen act as a Provisional Committee until the annual meeting in May.

A vote of thanks was proposed to Mr. R. H. Jones (Norwood), who had acted as Secretary, and the hope was expressed that he would continue to hold office permanently. The meeting terminated with a vote of thanks to the Chairman.

CHEMISTS' ASSISTANTS' ASSOCIATION.

A meeting of this Association was held on Thursday, January 23, the President, Mr. J. Wicliffe Peck, in the chair, when a paper was read by Mr. H. Ffoulkes on

Shakespearean Materia Medica.

Mr. Ffoulkes commenced by referring to the Shakespeare-Bacon controversy, and went on to say that when it was remembered that Shakespeare, who lived from 1564-1616, died nearly three centuries ago, it would readily be understood that pharmacy at that time was in an empiric state, and that the old apothecary was not far removed from the alchemist of an earlier period. Judging from Shakespeare's description of the apothecary in "Romeo and Juliet," his estimation of the predecessor of the modern chemist was not a high one. That this description was typical of the average apothecary as he existed in Shakespeare's time Mr. Ffoulkes thought would be admitted. English pharmacists were apt to plume themselves upon the Pharmacy Act with its scheduled poisons, which they regarded as quite a modern institution. But at Mantua, where the scene of "Romeo and Juliet" is partly laid, there was evidently at that early period, according to Shakespeare's imaginative mind, something like a Pharmacy Act, for when Romeo tempted the old apothecary to sell him some deadly poison the apothecary replied:—

Such mortal drugs I have; but Mantuan Law
Is death, to any that utters them.

Mr. Ffoulkes remarked that Shakespeare lived in an age which believed in witchcraft; consequently, many phenomena which to-day are realised to be the results of well-defined physical laws were ascribed to magic and enchantment, and he quoted several passages by way of illustration. He then read the following passages, which showed that Shakespeare seemed to have foreseen somewhat the trend of modern therapeutics in the direction of animal substances:—

The worms were hallow'd that did breed the silk,
And it was dyed in mummy, which the skilful
Conserved of maiden's hearts.

. . . .

. . . . . . how she longed to eat
Adders' heads and toads carbonadoed.

He next referred to a case of "Substitution," supposed to be a modern vice in pharmacy; but the doctor in "Cymbeline" when asked by the Queen for poisonous compounds,

To try the vigour of them, and apply
Allayments to their act.

practised a little sophistication, which he explains in a "stage aside":—

Cor.: I do not like her. She doth think she has
Strange lingering poisons. I do know her spirit
And will not try one of her malice with
A drug of such damn'd nature; those she has
Will stupefy and dull the sense awhile;
Which first, perchance, she'll prove on cats and dogs,
Then afterward up higher: but there is
No danger in what shew of death it makes
More than the locking up the spirits a time,
To be more fresh, reviving. She is fool'd
With a most false effect.

Shakespeare's idea of poisons, as they are understood to-day, was, from his limited knowledge, naturally vague. Many of the chemical substances of the present day were unknown, and the deadly and potent alkaloids which science has put into the hands of the modern chemist were, perhaps, undreamt of. On the other hand, the man who administered poisons, in what would now be called a crude form, went unpunished, because there were no means of detecting and proving his guilt. Consequently the references in Shakespeare to poisons were generally of a nebulous character. In only one instance had he found a poison actually designated by name. It occurred in "Hamlet," where the ghost of the dead King, in detailing to his son the manner of his death, states:—

Upon my secure hour thy uncle stole
With juice of cursed hebenon in a vial,
And in the porches of mine ears did pour
The leperous distilment.

It had, said Mr. Ffoulkes, been disputed whether "hebenon" here meant henbane or ebony. Grey quoted a passage in Pliny where it was stated that oil of henbane seeds dropped into the ears will injure the understanding (Nat. Hist. lib. 25, cap. 4). On the other hand, a passage of Marlowe's "Jew of Malta," cited by Steevens, showed that the juice or sap of hebon (ebony) was accounted poisonous:

the blood of Hydra, Lerna's bane
The juice of hebon, and Cocytus' breath.
(Words, p. 164, ed. Dyce, 1858.)

Whether Shakespeare referred to ***Hyoscyamus niger*** or not it was very evident that in describing the effects of the "juice" he gave full play to a redundant imagination.

Shakespeare had been claimed as a great temperance advocate, this claim being based on the well-known lines:—

Oh, thou invisible spirit of wine, if thou hast no
Name to be known by, let us call thee devil!

Now it was not referred to as "devil" but as ethyl hydroxide, or C_2H_5OH, which was certainly not so picturesque. Having quoted some half-dozen passages referring to all kinds of herbs and drugs, Mr. Ffoulkes said some of the pharmacists present might sometimes be asked to recommend something to place upon the breast when weaning a child. He did not know whether they would care to advise the plan adopted by Juliet's nurse of placing "wormwood" on the "dug." Shakespeare's love of flowers was next mentioned, some beautiful lines being quoted, and Mr. Ffoulkes concluded by remarking that he had only just touched upon one—perhaps the most insignificant—characteristic of the work of our great national poet, but he thought that, regarded from whatever standpoint, Shakespeare proved equally instructive, interesting, and amusing.

The President, Mr. Strother, Mr. Garsed and others having expressed their appreciation and thanks to Mr. Ffoulkes for his interesting paper,

Mr. S. C. G. Tweedy then communicated some notes on

Photographers and Bromide Printing.

After a few remarks on amateur photographers and their trials, Mr. Tweedy went on to deal with bromide printing, which he considered to be a far superior process than "silver paper" or ordinary P.O.P. It had, he said, many advantages over P.O.P., and its one disadvantage, viz., the necessity of a dark room, had been done away by the introduction of "gaslight" papers. Its advantages were summed up as follows:—(1) Greater ease and simplicity in manipulation, (2) the fact that the photographer is independent of daylight, (3) that more artistic results are obtainable, (4) that mounting becomes a pleasure instead of a "bug-bear," as is the case with P.O.P., and (5) that the paper lends itself more readily to "touching up," while for winter work it was just the thing desired. Mr. Tweedy then described the various processes of bromide printing, advising the amateur to see that the dishes are perfectly clean, to keep the hypo clean and covered over, and to use amidol as a developer. He also exhibited a very useful little instrument—Dawson's densitometer—for ascertaining the correct exposure. A description of this apparatus was published in the *P.J.* for October 19 last. In regard to mounting prints, Mr. Tweedy said it had often struck him that amateurs show a decided lack of taste and originality. With the range of mounts now on the market, he thought it ought not to be difficult to obtain a mount to suit the picture, and *vice versâ*, the result being that the mount shows off the picture and the picture the mount; in fact, to look as though the mount had been specially designed for that particular picture. And if no mount can be found suitable, said Mr. Tweedy, make one, it is simple enough. His remarks were rendered doubly interesting by a large assortment of films and bromide prints, kindly lent for the occasion by Messrs. Wellington and Ward, who also supplied samples of their papers.

An instructive discussion followed, the experiences in regard to bromide printing of several amateurs present being related, some of the speakers remarking that their chief difficulty was that the "correct" exposures mentioned by the manufacturers of the papers often proved to be too long. Mr. Tweedy pointed out, however, that the fault was not the makers', but was due to the variation in the density of negatives and the strength of the light.

The PRESIDENT having thanked the authors for their papers, the meeting terminated.

LIVERPOOL CHEMISTS' ASSOCIATION.

The annual meeting of this Association was held on Thursday, January 23, at the Royal Institution, the PRESIDENT, Mr. Harold Wyatt, jun., in the chair. The SECRETARY announced the donation of the Liverpool Engineering Society's bound 'Transactions' to the Library of the Association, and a vote of thanks was accorded for the gift. Mr. Mitchell, of King Street, Egremont, was elected a member of the Association.

MISCELLANEOUS COMMUNICATIONS.

A discussion took place as to whether the acid sulphate or acid sulphite of sodium should be used when a doctor ordered sodii sulph. acid. in a prescription. In a case mentioned the medical man wrote sodii sulph. acid., and, on being questioned, altered it to sodii sulphatis acid. Messrs. Hornblower, Abraham, Marsden, and Wokes joined in the discussion, and, as Mr. Marsden said that they used the salt at the Royal Infirmary, he was asked to examine it and report as to which of the two compounds it was, and also to inquire for what purpose it was used, as the acid sulphite was considered to be the most likely one to be required.

Mr. WOKES had had a prescription of borax, gr. xxx., sodium bicarbonate, gr. xxx., and cocaine hydrochlorate, gr. xxx., in 10 oz. of water, in which, of course, the cocaine was precipitated. Communicating with the medical man, permission was obtained to add glycerin, ½ oz., which redissolved the cocaine owing to the formation from the borax of sufficient boric acid to restore equilibrium.

ELECTION OF COUNCIL.

The retiring members of the Council were then unanimously re-elected. The Treasurer's statement was presented, showing the financial state of the Association as normal, and Messrs. Wokes and Wallbridge were elected Auditors to go into the accounts. An annual report drawn up by Mr. Cowley, one of the Honorary Secretaries, was then read and passed. It will be printed and published shortly for the information of members, who should appreciate the increased amount of material it now contains—the particulars of the various papers being given in a small summary calculated to make the report worth keeping as a record.

Mr. HAROLD WYATT, jun., the re-elected President, then delivered an address, entitled—

Some Phases of Modern Pharmacy,

in which he referred to the trade difficulties which have exercised the minds of pharmacists for the last two or three years. He said legislation was needed to remove the unfair competition with which chemists had to contend, through the carrying on of ostensibly chemists' businesses by unqualified individuals and the dispensing of medical prescriptions by the aforesaid individuals and by unqualified assistants to doctors. By their training and examination chemists had an absolute and undoubted right to have restricted to them the dispensing of everything ordered in the prescriptions of properly qualified medical men. That was a right to which chemists had a clear claim, and whatever legislation the future might bring forth, no Bill would be worthy the support and countenance of pharmacy generally which did not make the restriction of dispensing generally to properly qualified persons its chief demand. There were chemists with ideas sufficiently mediæval to prompt them to ask for the sole monopoly of trade in the thousand and one extraneous articles in which chemists and druggists deal, but such a monopoly would never be granted. How could pharmacists hope for the support of legislators if in matters of education they proclaimed themselves more backward than ordinary tradesmen? The abolition of the Pharmaceutical Society's Preliminary Examination had been the cause of an outcry which clearly showed that, whilst claiming semi-professional recognition, many of the individuals in the ranks of pharmacy were, educationally speaking, below the level of mere tradesmen. If the Pharmaceutical Society had done nothing else of late to justify its existence, it had done well to abolish its Preliminary Examination, and so remove what had been a standing reproach to pharmacy. The apprentice was too often regarded as a source of cheap labour, and any idea of his getting a *quid pro quo*, in the shape of knowledge of his business, was scarcely thought of by the bulk of those who complained about the dearth of apprentices. The state of pharmacy demanded the restriction of dispensing to legally qualified persons, and good, systematic, and continuous education for youths entering the business. After passing his entrance examination, the youth should be made to serve for three years at least, in a properly conducted pharmacy, after which he should go through a course of study at a school of pharmacy or in a University before proceeding to his qualifying examination. The training in a pharmacy should be insisted upon as a preliminary to the final course of study, and any scheme providing one entire scholastic course in a school of pharmacy or University should be resolutely opposed, for without previous shop experience a scientist might be made, but not a good, all-round practical pharmacist. The opportunities now available to young men for obtaining instruction in the purely scientific branches were so numerous that a youth during his three years' shop training could easily get a good grounding in chemistry and physics, so that the student should be able to proceed to the qualifying course not altogether unprepared. The proposed division of the qualifying examination would be an excellent arrangement, and one which would ensure, if possible, even greater fairness to the candidates and a corresponding reduction in the percentage of rejections. After qualifying, the pharmacist would naturally expect that some distinct and positive advantages, such as the exclusive right to dispense medicines, should accrue to him in consideration of the training and examination he had undergone. At the same time, he should be entitled to carry on only one pharmacy, in which he should practise himself personally, and for which he should be responsible. To strengthen the hands of the Pharmaceutical Society in working for these and other reforms, some scheme ought to be devised by which every one who passed the qualifying examination should become a member of the Society, with full voting power. The retention of an examined pharmacist on the Register of those qualified and permitted to keep open shop should be dependent on his registering himself year by year, paying for the privilege a moderate subscription. With regard to the future, pharmacists were now passing through a long and tedious period of transition, but there were indications of more legitimate work in the future for the pharmacist who was capable, educated, and intelligent. When a medical man found that a pharmacist was well up in his business and capable of supplying the remedy needed, he was apt to bestow his patronage with no sparing hand, so much so, that in time to come it was probable the prescriptions would consist simply of directions as to the dose of the particular medicament required, the vehicle and other minutiæ being left to the discretion of the pharmacist. In conclusion, pharmacists were recommended to indulge in hobbies, to attend meetings of local associations, and mix more with the world, and not to misdirect their energy by joining that section of chemists which lives apparently for the sole purpose of writing to trade papers letters of inordinate length and involved meaning, directed against the Pharmaceutical Society and everything connected with it. If all such misplaced and badly-directed energy could be turned to useful account, editors would be the gainers in space and the readers of the papers relieved from wading through a mass of useless verbiage.

Mr. R. C. COWLEY next read a paper by himself and Mr. J. P. Catford on

The Purity of Calcium Phosphate.

At the conclusion of the paper, which is printed in full at page 86, the PRESIDENT congratulated Mr. Cowley on the work he had done in collaboration with Mr. Catford, which he held up to the emulation of their fellow members as work which was always novel, always good, and which invariably had a practical and logical issue.

Good discussions followed the Presidential address and the paper read by Mr. Cowley, Messrs. Wardleworth, Cowley, Wallbridge, MacAllie and Marsden taking part therein, and the customary votes of thanks were subsequently accorded.

CHEMISTS' AND DRUGGISTS' SOCIETY OF IRELAND.

The annual musical evening of this Society was held in the Whitehall Buildings, Ann Street, Belfast, on January 24. Mr. JAMES TATE occupied the chair, and there was a very large attendance. The CHAIRMAN said the Society was in a prosperous condition, and he hoped that success would follow them in the future. In conclusion, he wished all present a pleasant evening. A splendid programme was then gone through, the following taking part:—Messrs. C. Abernethy, T. W. Gibson, J. Harper, John Morrison, James M'Cormick, R. Dimond, S. Holmes, Liggett, Burland, King, Firth, M'Dade, and M'Dowell; Misses Ida Corbett, Magill, Orr, M'Camley, Tumath, Grills, Nora Corbett, and M'Dowell. A very enjoyable evening concluded with the singing of "God Save the King." Messrs. Hans Ulrich and George Howard played the accompaniments to the satisfaction of all.

The following are the office-bearers of the Society for this year:—President, Sir James Haslett, M.P.; Vice-Presidents, Messrs. Thomas M'Mullan, Wm. Jamison, John Watson, Wm. Doig, and James Hogg; Hon. Treasurer, Mr. Samuel Gibson; Hon. Secretary, W. J. Rankin; Committee, Messrs. Samuel Acheson, Henry Backhouse, James Brown, James D. Carse, Thomas Campbell, Robert Cambridge, John Frackelton, W. J. Gibson, James Gillespie, Alex. R. Hogg, Samuel Hill, Robert A. Jamison, William Lyttle, John M'Clement, J.P.; John M'Conkey, Samuel M'Dowell, Thomas W. Reynolds, Jas. Richardson, John H. Shaw, Samuel Suffern, and Jacob Walsh.

PLYMOUTH CHEMISTS' ASSOCIATION.

The quarterly meeting of the Plymouth, Devonport, Stonehouse and District Chemists' Association was held at 7, Whimple Street, Plymouth, on Wednesday, January 22. Mr. C. T. WEARY presided, and the other members present were Messrs. J. Barge, F. Maitland, J. Davy Turner, R. F. Roper, C. J. Park, J. Cocks, F. W. Hunt, H. P. Hearder, E. W. H. Green, G. M. Venn, H. M. Morgan, and G. Fairweather (Hon. Sec.). Messrs. Brown and Woolley (Devonport) were elected new members, the latter of the junior section.

Mr. MAITLAND reported that as the result of

THE ANNUAL BALL

there was a small balance to be handed over to the Association. It was considered that this was very satisfactory, and appreciation was expressed of the work of the Hon. Secretary (Mr. Maitland), who so largely contributed to the success of the ball.

It was also unanimously decided to support the petition in favour of Lord Avebury's proposed Bill for

SHORTENING THE HOURS OF BUSINESS

in shops.

A lengthy discussion upon the question of the establishment and support of

Provincial Schools of Pharmacy.

was provoked by the letter of the Hon. Secretary of the Federation of Local Pharmaceutical Associations, forwarding the paper read on the subject by Mr. James Paterson at the annual meeting of delegates at Dublin, and the request that the various associations should forward information as to the possibilities of such education being provided for in their districts.

The PRESIDENT said Mr. Paterson's paper was a very excellent one on an extremely important subject. As was pointed out, pharmacy was one of the few callings not considered at all in the matter of technical education, although, as far as he could see, it had a prior claim over almost all others. This was an undesirable state of things, and was probably partly accounted for by the fact that there was a lack of cohesion among chemists. They did not combine and ask for these facilities, and appeal to their respective local members of Parliament in the matter. They as chemists and business men knew the advantage it would be to have apprentices and assistants that had been thoroughly trained, not crammed, and had passed through schools where they obtained education in the proper manner. It would be also a great advantage to the students themselves. Not only from the higher point of view of education, but also from a financial standpoint, it would pay them to have in their business men trained in such schools. If they had in that town a good centre of technical education where students could obtain these facilities, he believed it would partly do away with the great difficulty experienced in obtaining apprentices. Probably a larger number of young fellows would want to become apprentices in the district in order to obtain these educational facilities. With reference to the question of support, it was suggested that money could be obtained from the Government moneys devoted to technical education, grants from the Pharmaceutical Society, and from local associations. Their own Association had a collection of specimens, which would be at the disposal of any class started. At present there were very few juniors in the Three Towns, but if classes were started they would very likely secure a largely increased number of students.

Mr. Barge felt that chemists would never obtain just what was required if they were dependent on classes conducted by local associations. They should place the matter before the Council of the Pharaceutical Society, with a request that the grants to technical schools should include the provision of a thorough training in pharmacy in all large towns. Further, in view of the fact that this special training was necessary in the interest of the public safety, all such schools of pharmacy should receive Government support.

Mr. Maitland, however, said chemists could not expect the Government to send any grant to them direct. The Technical Education Committees received and dealt with the funds for the respective centres, and they would be the best authorities to work this matter. If the Association approached them, and showed that they had a sufficient number of pupils to form a class, there was no doubt the committee would be ready to provide the facilities required

Mr. Turney said the whole matter hinged upon whether money was forthcoming from the Government or other sources in order that an efficient pharmaceutical education might be supported in the district. It was very evident, from efforts in the past, that it was impossible to work a school to teach pharmacy in Plymouth as it should be carried on without a special grant of money. Everything depended upon whether they could get the Government to recognise pharmacy as one of the branches that ought to receive money support.

Mr. Park mentioned that when the Association approached the headmaster of Plymouth Technical Schools some time ago he pointed out that the matter was one of money. The whole of the sum granted the centre was allotted, and there was none to spare for the running of special classes for the teaching of pharmacy. Chemists must recognise, however, that they were at present helped to a considerable extent by these schools. Although all the subjects were not taught which they regarded as forming a perfect curriculum, classes for the principal subjects—organic and inorganic chemistry, botany, and materia medica—materially assisted their students. They were thus already in a very fair position as regarded educational facilities in Plymouth.

Mr. Hunt said the Technical School authorities were anxious to help the Association, and the headmaster considered the chemists had a perfect right to ask for educational facilities, and promised that whatever recommendations were placed before the Technical Education Committee would be carefully considered.

After further discussion, it was agreed that the Honorary Secretary should write to the Secretary of the Federation, giving a general statement as to the possibilities of a pharmaceutical education in the district, and mentioning the character of the classes provided by the technical schools.

With respect to the matters which the letter of the Secretary to the Federation mentioned as intimately associated with this question, Mr Roper thought it much better that
THE MINOR EXAMINATION SHOULD BE DIVIDED,
and purely scientific subjects taken at periods during apprenticeship, so that greater time and attention could be devoted to the purely technical subjects. All the examinations of other professions were divided in that way.

Mr. Park said it was impossible for the Society to divide the Minor Examination without a new Act of Parliament. Moreover, he did not consider the present Minor Examination pressed heavily on students who were industrious during apprenticeship. If the examination were divided he believed students would have to pass a much more severe test than at present.

By six votes to four the meeting decided in favour of the existing arrangements.

The request for suggestions which would tend to the removal of the difficulty experienced in obtaining an adequate supply of
SUITABLE MATERIAL FOR APPRENTICES
elicited a response of "Shorter hours!" from several members at the same time.

Mr. Maitland: And more generous treatment. Pupils should be given time for study as part of their business hours.

Mr. Turney stated there was no doubt that the increased difficulty of the Preliminary Examination was one of the factors.

Mr. Roper said that, as Mr. Allen had told them, if they were honest they could not tell parents thinking of apprenticing their sons what was too favourable.

Mr. Hunt said people in other businesses, without the examination, and with shorter hours, could not obtain apprentices.

On the motion of Mr. Roper. it was decided that shorter hours and greater attention to educational facilities would tend to remove the difficulty.

SHEFFIELD PHARMACEUTICAL SOCIETY.

At a meeting of the Sheffield Pharmaceutical and Chemical Society, held in the Montgomery Hall, Sheffield, an January 23, Mr. John Austen, President, occupied the chair, and among others present were Messrs. G. Squire, G. Ellinor, H. Watts, C. F. Carr, H. Antcliffe (Secretary), and others. After the ordinary business of the meeting had been transacted, an interesting paper on
USEFUL ADVERTISEMENTS
was given by Dr. Waddy, who spoke of the great quantities of articles which enterprising companies send out as advertisements, and showed how they could be turned to such useful purposes as the decoration of screens, making blotting pads, etc. By going in this way through a long list of articles, and suggesting uses for which they were never intended by those who issued them, the lecturer kept his audience amused for a considerable time. At the conclusion he was cordially thanked.

SWANSEA CHEMISTS' ASSOCIATION.

The annual dinner of this Association was held at the Hotel Cameron, Swansea, on Thursday, January 23, the President, Mr. Davies, being supported by Mr. C. B. Allen (of Kilburn, Vice-President of the Pharmaceutical Society of Great Britain), Mr. Grose (Temple Street), Mr. Lloyd (Oxford Street), Mr. J. T. Davies (Walter Road), Mr. Isaac (Neath), Mr. Hughes (Wind Street), Mr. Arnold (Cwmavon), Mr. Havard (Brynymor Road), Mr. Davies (Clydach), Mr. Rees (Skewen), Mr. Keall, Mr. Davies, jun., Mr. Moses Jones (High Street), Mr. Rees (St. Thomas), Mr. Richards (Castle Street), Mr. Ivor Jones (Neath), Mr. Bowen (Pontardulais), Mr. J. W. Davies (Oxford Street), Swansea.

The loyal toasts having been duly honoured, the President, in a few happy sentences, proposed success to the
PHARMACEUTICAL SOCIETY OF GREAT BRITAIN,
coupling with it the name of Mr. C. B. Allen.

Mr. Allen prefaced his remarks by thanking the President for the kind words he had spoken of him and the Society, and went on to say how pleased he was to have the opportunity of addressing such a gathering of his fellow craftsmen. The Pharmaceutical Society was not a trades union, but it watched very particularly over the educational advancement of the trade. He hoped the time was not far distant when the public would recognise the education required, and the skill and care necessary to properly prepare medicines, and pay the dispensing pharmacist a fair remuneration. At present he was worse paid than a skilled mechanic. He touched upon the excellent work of the Benevolent Fund, and enumerated several important matters which the Society was carefully watching over.

WOLVERHAMPTON CHEMISTS' ASSOCIATION.

The second annual meeting of this Association was held on January 27, at the Star and Garter Hotel, Wolverhampton. The annual report gave a brief summary of the work of the session. There had been seven meetings covering a variety of subjects, which included a discussion on the Pharmacy Bill, Dispensing Notes by Mr. H. Forster, the Desmids of Sutton Park, beautifully illustrated by Micro-Photographs, by L. J. Reade; a discussion on Laws and Customs of Poisons; Pharmacopœia Notes. A very successful smoking concert in October, and an enjoyable picnic in July, helped to relieve the monotony of business and business talk. The adoption of the report, proposed by Mr. F. J. Gibson, and seconded by Mr. E. F. Coleman, was unanimous.

Election of Officers.

The election of officers then took place. Mr. S. Phillips was re-elected President, Mr. F. J. Gibson was appointed Vice-President, Messrs. Cullwick and Harold Coleman were unanimously re-elected Treasurer and Secretary respectively. Messrs. H. Forster, M. R. Warner, A. C. Weaver, and F. A. Willcock were elected as the Committee. A hearty vote of thanks was unanimously passed to the President for his services of the last twelve months. Mr. Phillips, in replying, said he hoped for more papers and a larger attendance. Mr. Warner proposed, and Mr. Weaver seconded, the donation of 21s. to the Benevolent Fund, which was unanimously carried. The Treasurer (Mr. Cullwick) had previously said he would give the same amount as the meeting voted, which statement was received with applause.

NEWCASTLE CHEMISTS' ASSOCIATION.

At the meeting of this Association, briefly noticed last week as having been held at North Shields, on Wednesday, January 22, Mr. Barry Noble, of Heaton, dealt with

The Apprenticeship Problem.

which he divided into three main issues, thus:—(1) What is the cause of the present famine in apprentices? (2) What will be the final result if we do not replenish the ranks of our calling with new blood? (3) How are we to remedy the evil? Briefly summarised, the replies to the foregoing queries were:—(1) That no one was to blame more than chemists themselves, owing to the majority having failed to become members of the Pharmaceutical Society, thus having no voice or vote in pharmaceutical politics; (2) That if the shortage in apprentices continues it will be necessary to get the Pharmacy Act of 1868 amended, and that then the case in Great Britain would be similar to what occurred in Ireland in 1890, when the Irish Pharmacy Act of 1875 was amended, and the Legislature listened to the demands of the unregistered traders in drugs, and gave those who were actually in business the title of chemist and druggist; also there was the danger that in the future doctors would do the dispensing, the wholesale houses the practical pharmacy, while the chemist would become a mere distributor of manufactured goods, and what dispensing the doctors left to be done would be secured by companies who keep "qualified" dispensers, *i.e.*, holders of the Apothecaries Certificate, in fact, he believed that some companies are already engaging such dispensers, and are advertising that prescriptions are dispensed by qualified dispensers; (3) That the premium system must be abolished, apprentices must be paid a fair wage, and be taught the art of pharmacy; all chemists must join the Pharmaceutical Society, and let the Council know what it must do; and the Minor Examination must be divided.

CHEMISTS' MANAGERS' AND ASSISTANTS' SOCIETY.

As announced briefly last week, a meeting of this Society was held at the Horseshoe Hotel, Tottenham Court Road, London, on Wednesday, January 22, when the President, Mr. C. E. Pickering, read a paper on

Salaries.

Starting with the supposition that the junior assistant had passed the Preliminary Examination, and had satisfactorily completed a well-arranged apprenticeship, having been thoroughly taught the general routine of a good family and dispensing business, with some agricultural and veterinary work, and had laid the foundation of his knowledge in pharmacy, Mr. Pickering considered he was worth at least 10s. a week, with board and lodging, or he was not worth anything; hence the minimum salary should be £30 per annum indoors, or £75 outdoors, and after two years £40 indoors, or £85 outdoors. Then would follow a period of study, and after passing the Qualifying Examination it became a vital question whether to at once return to business, or acquire the Major diploma. Every man who wished to be able to accept a "scientific" position in pharmacy, he thought, should have the Major certificate at least, and it was advisable to secure it right away if possible. The majority, however, were usually content with the legal qualification—the Minor—and on gaining that, with his previous experience, the assistant should expect to receive not less than £60 per annum indoors, or £120 outdoors. Mr. Pickering went on to recommend the young qualified assistant to become a "rolling stone" for a few years, taking situations in London, and various parts of England, Wales, and Scotland, and if possible on the Continent. He should then be qualified to take a position as manager of a good family and dispensing business where two or more assistants are kept, and should be worth £80 indoors, and from £140 to £160 outdoors, with a commission on results. In regard to the indoor system, he thought it was doomed to early extinction.

After some discussion it was decided to form a sub-committee to consider the paper, and to arrange for its being printed and circulated amongst members.

Obituary.

Chapman.—On January 18, Frederick Chapman, Chemist and Druggist, Heanor. Aged 74.

Harston.—On January 16, John Frederick Harston, Chemist and Druggist, Bristol. Aged 48.

Nobbs.—On January 20, James William Nobbs, Chemist and Druggist, East India Dock Road, E. Aged 62.

Pott.—On January 24, Frederic Fore Pott, Chemist and Druggist, Lower Tranmere. Aged 51.

Sibthorp.—On January 13, Stephen James Kenneth Sibthorp, Chemist and Druggist, West Hampstead. Aged 52. Mr Sibthorp had been connected with the Pharmaceutical Society for many years as an Associate, and latterly as a Member.

Thompson.—On January 19, Henry Thompson, Pharmaceutical Chemist, Highbury Hill. Aged 75.

Turner.—On January 9, Jabez Turner, Chemist and Druggist, Prittlewell, formerly of Hackney. Aged 75.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

DISEASE OF THE CHERRY. A. O. Walker exhibited at a recent meeting of the Linnean Society some branches of cherry affected with a fungus disease caused by *Gnomonia erythrostoma*, and stated that, in the autumn of 1900, certain varieties of cherry were noticed in Kent to retain their leaves in a withered state at the time of normal leaf-fall. They were examined by G. Massee, and the fungus causing the mischief was ascertained to be *Gnomonia erythrostoma*, Auersw. The Royal Agricultural Society investigated the evil, and recommended that all the affected leaves should be stripped off and burned, to avoid further mischief. Although few growers did this the crop of 1891 was exceedingly good. The immunity of the cherry orchards from the menaced calamity was ascribed by the exhibitor to the comparatively equable temperatures and the small rainfall of the latter year, whilst the outbreak of 1900 was attributed to the extreme low temperatures in May, following abnormally high temperatures in April.

SPECIFIC GRAVITIES OF ESSENTIAL OILS. Oswald Schreiner and W. R. Downer have determined the change of sp. g. of certain essential oils for each degree Centigrade between 15° and 25°. The following are the means of the results obtained :—Bay oil, 0·00067; bergamot, 0·00067; bitter almond, 0·00063; cade, 0·00049; cajeput, 0·00068; caraway, 0·00058; cassia, 0·00063; cinnamon, 0·00067; cinnamon leaf, 0·00070; cloves, 0·00063; copaiba, 0·00050; coriander, 0·00073; cubebs, 0·00057; erigeron, 0·00060; eucalyptus globulus, 0·00074; fennel, 0·00072; lemon, 0·00062; nutmeg, 0·00066; orange, sweet, 0·00063; pennyroyal, 0·00065; peppermint, 0·00060; pimento, 0·00068; rosemary, French, 0·00060; rosemary, flowers, 0·00067; sandalwood, 0·00053; sassafras, 0·00063; savin, 0·00067; spearmint, 0·00068; star anise, 0·00062; thyme, white, 0·00063; wintergreen, 0·00082; wormseed, American, 0·00064.—*Pharm. Archives*, **4**, 165.

MIDDLE LAMELLA OF CELLS. C. E. Allen explains the differentiation of a central layer in the membrane of cellular tissues, differing in its optical and staining properties from the layers on each side of it, somewhat differently from previous observers. He regards this central layer as composed of a substance of a pectic nature, a plastic portion of the cell-wall itself, capable of increase or decrease in volume, and of changes in chemical composition, adapting the cell-wall to the alterations in size and form of the protoplast itself.—*Bot. Gazette*, **32**, 1.

AROMADENDRENE. H. G. Smith states that a sesquiterpene, for which he proposes the name aromadendrene, occurs in many eucalyptus oils, and that to this constituent is due the pink coloration developed in performing the phosphoric acid test for eucalyptol. In the oil of *E. hæmastoma* the sesquiterpene occurs in large quantities, over 50 per cent. of the crude oil distilling above 255° C. It is also present in small amount in the oils of other species. When bromine vapour is allowed to come in contact with a mixture of the sesquiterpene dissolved in glacial acetic acid, a crimson colour is immediately formed, changing quickly to violet, and finally to a deep indigo-blue. The boiling point of the substance at ordinary pressures is 260-265° C. Specific gravity, 0·9249 at 19° C.—*Chem. News*, **85**, 3.

SPOONFUL DOSES. C. B. Lowe calls attention to the varying capacity of domestic tea, dessert, and table-spoons, and deprecates the practice of prescribing and measuring medicines in the prevailing manner. Now that standardisation of potent pharmaceutical preparations is being so widely advocated, as well as the prescribing of alkaloidal salts instead of crude galenicals, the subject is one of considerable importance, especially where maximum doses are prescribed. The author finds ten teaspoons to vary in capacity for water from 75 to 130 minims, the three spoons holding the least being known to be over one hundred years old. A similar variation was observed with table-spoons and dessert-spoons, the average giving 25 per cent. in excess of the accepted measure. With the use of certain teaspoons, the patient might easily take $\frac{3}{32}$ grain of strychnine where $\frac{1}{16}$ grain is prescribed, or 6 minims of dilute hydrocyanic acid instead of 4 minims. The use of glass graduated measures should be insisted upon, in such cases, by the prescriber.—*Amer. Journ. Pharm.*, **73**, 593.

LINNEAN SPECIFIC NAMES. H. and J. Groves have read a paper before the Linnean Society, in which they show that great diversity of practice exists in dealing with Linnean specific names, and point out the necessity of arriving at some agreement as to their use as a first step towards uniformity in nomenclature. They group the Linnean specific names under the following heads:—(1) Those applied to distinct species fairly well understood in the time of Linnæus, and still generally accepted. (2) Those which are now considered to include two or more species, combined by Linnæus owing either (*a*) to the imperfect knowledge of the plants at the time, or (*b*) to the different ideas then and now as to the extent of species. (3) Those about which there is more or less doubt as to their proper application, owing (*a*) to the descriptions being imperfect, (*b*) to the synonymy (often the most important part of the description) being contradictory, or (*c*) to confusion due to changes made by Linnæus himself after publication. After discussing the various methods adopted and the difficulties connected with each, the authors recommend that, as far as possible in doubtful cases, the description in conjunction with the reference to early authors should be relied on, always construing the species liberally, and that when the specimens in the Linnean herbarium or amendments in the second edition of 'Species Plantarum' are at variance with this conception of the species, they should be disregarded. As regards group 2, they recommend that the name should be retained for the type if specified, or if not to the species which may be most fairly regarded as the type, and in the absence of such to the residuary species after others had been cut off; and as regards group 3, that unless the evidence is hopelessly vague, or contradictory, the names should be retained for the species for which the weight of evidence points to their having been intended. Specimens were exhibited of the plants which, following the practice advocated, would stand as *Hypericum quadrangulum*, L., *Epilobium alpinum* and *E. tetragonum*, L., and *Sparganium erectum*, L., also of the allied species in each case bearing on the question.

PANCREONE. This is a new product obtained by the action of tannin on pancreatin. It is described as a greyish powder, which is without odour, and is only slowly attacked by the gastric juice. It is a powerful peptonising agent, 100 grammes of the white of egg treated with a slightly alkaline solution of one gramme of pancreone, and the mixture kept at 40° C. for fifteen minutes, being peptonised to the proportion of 85 per cent.—*Pharm. Era*, **26**, 565.

ASSAY OF BISMUTH.

A. W. Warwick and T. D. Kyle refer to the difficulties and inaccuracies of the methods of assaying bismuth ores at present in use, and describe a volumetric process which is simple and accurate. A weighed quantity of the crushed ore is heated with nitric acid, and evaporated to dryness. The residue is then treated with a further definite quantity of acid and solution effected by hot water. Oxalic acid or ammonium oxalate are then added to the solution, and the whole boiled vigorously for five minutes. The supernatant liquid is poured off, and the normal oxalate converted into the basic oxalate by repeated digestion with boiling water. The well-washed precipitate is then dissolved with the aid of hydrochloric acid, and the solution made just neutral with ammonia, dilute sulphuric acid is then added in excess, and the oxalic acid titrated with permanganate in the usual manner.—*Chem. News*, **85**, 3.

PHYSIOLOGICAL FORMATION OF THEINE.

V. Suzuki finds that the seeds of the tea plant contain no theine, nor do the proteids of the seed yield any, so that the formation of the alkaloid cannot be attributed to the dissociation of the albuminoids during germination, but must be due to a transformation of the products of metabolism. Light has no influence on the formation of theine. The cotyledons of seedlings and the roots and stems of the plants contain but traces. It is chiefly found in the epidermal tissue of the leaf. This may be shown by macerating sections in a 3 or 4 per cent. solution of tannin, when the epidermal cells will show an abundant precipitate of theine tannate. The author does not consider theine to be a synthetic product like asparagin, but rather the result of katabolytic processes, since by treating the plant with sodium nitrate no marked increase in the amount of theine could be noted.—*Pharm. Zeit.*, **46**, 849, after *Bull. Coll. Agric., Tokio.*

DETERMINATION OF TERPENIC ESTERS AND ALCOHOLS.

G. Darzens and P. Armingeat find that the method of determining the proportion of terpenic alcohols by means of their solubility in 50 per cent. sodium salicylate solution, as first suggested by M. Duyk (*P.J.* [4], **9**, 300), and subsequently adopted by Charabot and Hebert, and others, is not even approximately accurate. Experimenting with mixtures of alcohols and esters in known proportion, they find that the portion soluble in the reagent still retains a large amount of ester; while the insoluble layer, which should consist wholly of esters, retains a correspondingly great quantity of the alcohol. A mixture of geraniol and geranyl acetate containing 40·6 per cent. of the latter, when treated with the sodium salicylate solvent, gave, in the soluble portion 42·3 per cent. of the ester, and in the insoluble portion but 61·5 of the alcohol. With linalool containing 34·4 per cent. of linalyl acetate, the soluble portion contained 29 per cent. of ester or 71 per cent. of alcohol, and the insoluble layer which should be practically free from ester no less than 40·7 per cent. was found. A mixture of rhodinol and rhodinyl acetate containing 45 per cent. of the latter was entirely soluble in the salicylate reagent. It is evident that the solubility of the terpenic alcohols in saturated salicylate solution is purely a physical phenomenon, and that the esters, being very soluble in the alcohols, are also dissolved by the solution of these alcohols in the reagent, and, *vice versâ*, the alcohols are dissolved also in the ethereal layer. The application of this method for the determination of the amount of esters and alcohols in essential oils is not, therefore, wholly reliable.—*Bull. Soc. Chim.*, **25**, 1053.

CHILLIES AND CAPSICUMS.

Under the title of "Les Piments de Solanées," Guillard has recently published in a thesis an interesting account of chillies and capsicums embracing the botanical study of the genus, the history and anatomy of the fruits, cultivation and the modifications produced by it, the commerce and uses. In view of the investigation of the structure of *Capsicum minimum* recently carried out by Wallis (*P.J.* [4], **13**, 552) the following résumé of Guillard's work may not be without interest, more especially as he differs from Wallis in an important bearing of the work.

The historical introduction, in the compilation of which the author no doubt owes much to the excellent library of the Ecole de Pharmacie, as well as to its well-known and courteous librarian, M. Dorveaux, is accompanied by a number of reproductions of illustrations from the works of Fuchs, Monardès, Clusius and others; the results of his investigations are to the effect that the cultivation of these plants in Mediterranean countries was subsequent to the discovery of America, of which they were probably natives. The study of the botanical characters of the genus leads Guillard to concur in the opinion that the numerous species and sub-species were all originally derived from two, viz., *C. annuum*, L., and *C. fastigiatum*, Bl.

Like most Continental histologists, Guillard selects the fruits of *C. annuum* for detailed investigation of the structure, but treats it with less minuteness than Wallis that of *C. minimum*. With the former he compares the latter, and points out differences in the hypodermal layers of the pericarp and in the transverse sections of the thickened cells of the seed-coat, but concludes with the observation that the powders of the two drugs are identical, as the differences alluded to are not perceptible in the coarse powders of commerce. Wallis, however, in confirmation of other authorities, points out that the epidermis of the pericarp of *C. minimum* differs from that of *C. annuum*, and the difference can be easily detected in the powders, which, naturally, if too coarse for examination, can be dried and reduced to finer powder. The accuracy of Wallis's statement that the two powders can be distinguished by microscopical examination can easily be verified with the Zanzibar chillies and Bombay capsicums of English commerce.

In studying the localisation of the active principle, Guillard makes use of a saturated solution of Soudan III. in 70 per cent. alcohol, to which, when prepared, 2 per cent. of acetic acid is added. The sections are allowed to remain in this reagent for five to ten minutes and examined in pure or acetic glycerin. This reagent he prefers to tincture of alkanna, as well as to osmic acid.

The third chapter of the thesis contains a lengthy description and enumeration of the species, etc., of the genus, many of which were grown specially in hothouses, but this section cannot be profitably abstracted.

With regard to the physiological and structural modifications produced by the cultivation of the fruit, the author concludes that the amount of pungent principle diminishes in proportion as the size of the fruit increases until it finally disappears, but the minute structure remains unaffected. The thesis concludes with a short account of the commerce and uses of the drug.

Surgical Soap Solution.

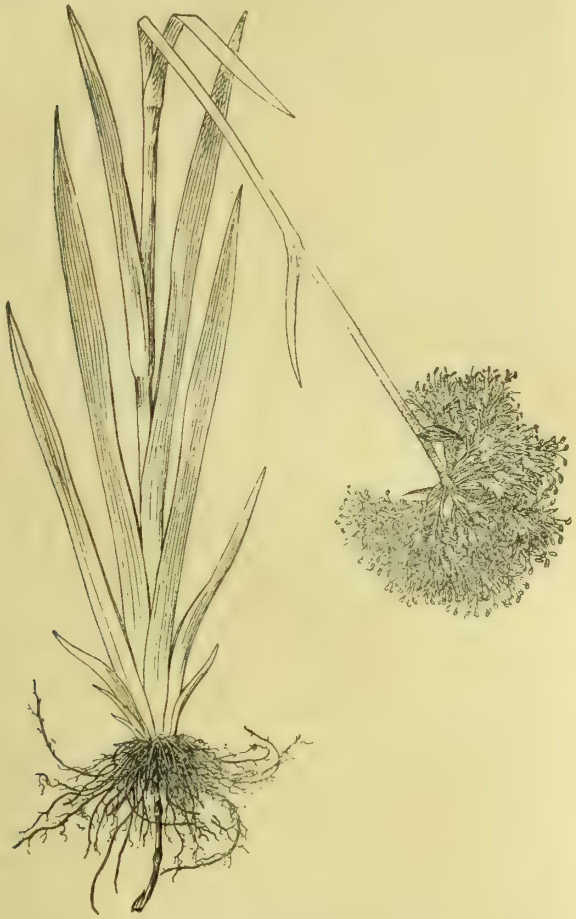
Terrier employs the following liquid soap for general washing of patients:—White Castile soap, 1 kilo; soft soap, 1 kilo; olive oil, 1 kilo; water, 50 litres; naphthol, 25 Gm.; lemon oil, *q.s.* to perfume. Heat the soap and oils together in the water for twenty-four hours at least, then add the naphthol and filter.—*L'Union Pharm.*, **42**, 533.

LACHNANTHES TINCTORIA, ELL.

BY E. M. HOLMES, F.L.S.

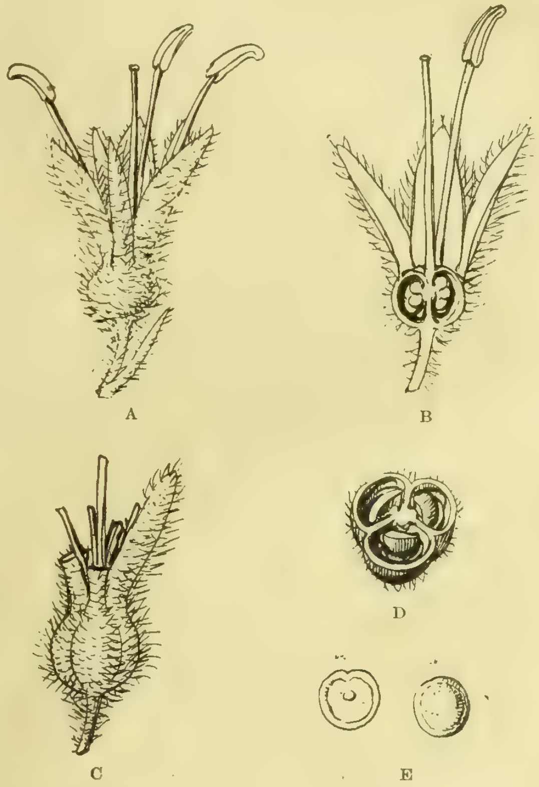
This North American plant has recently attracted considerable attention as a proposed remedy for consumption, and as preparations of the drug may as a consequence possibly be in request, it may be useful to give a description of the drug.

The plant is a native of swamps in pine barrens from East Massachusetts to Florida, chiefly near the coast, and also occurs in Cuba, growing on the moist soil on the sides of ditches and at the edges of ponds. It belongs to the natural order Hæmodoraceæ, the plants of which much resemble some of the Iridaceæ, but have introrse anthers, stamens opposite the inner segments of the perianth, and the outer segments of the perianth frequently woolly. It flowers from July to September.



Lachnanthes tinctoria.—Whole plant, showing rhizome, reduced to rather more than one-third base.

The *Lachnanthes tinctoria* in its mode of growth resembles the common garden perennial, *Schizostylis coccinea*, in having narrow equitant leaves, a fibrous root and a slender rhizome by which the plant is propagated. This rhizome is slender, wiry, and of a red colour with sheathing scales at intervals. It is about 1 to 2 millimetres in diameter, and 1 to 2 inches or more long, of a dark red colour and minutely wrinkled. The fresh fracture presents a resinous appearance and red colour with scattered white dots representing the vascular bundles. This form of the drug does not at present appear to be obtainable in English commerce, and it must always be expensive, as it necessarily forms but a small proportion of the plant. The form in which the drug is at present obtainable is the entire plant in flower or in fruit. The stem is 1½ to 2½ feet high, hairless below, but woolly above, with leaves 2 to 5 lines wide, grasslike, alternate, the upper ones reduced to bracts. The inflorescence is compact and capitate when young, but more diffuse, and 2 to 5 inches across when fully expanded. The flowers are 4 to 5 lines broad, and bracteolate; the style is simple and about as long as the stamens which exceed the perianth in length; the anthers are introrse; the pedicels are shorter than the bractlets, and the capsule is about 3 lines in diameter and trilocular. The six perianth segments are linear, glabrous, yellow on the inner surface and woolly outside. Illustrations are given in Britton and Brown's 'Illustrated Flora of the Northern United States' (New York, 1891), Vol. I., p. 443, under the name of *Gyrotheca capitata*, Salisb. The seeds are flattened, slightly concave, convex, amphitropous, with a narrow margin, are of a dull red colour, and about 1 line in diameter.



Lachnanthes tinctoria.—A, flower; B, longitudinal section of same; C, fruit; D, transverse section of same; E, seeds. All enlarged.

Lachnanthes was originally a homœopathic remedy introduced by Dr. Herring in 1852, and was "proved" by Dr. Lippe, who gave an account of the symptoms it produced in healthy individuals, 'American Homœopathic Review,' Vol. IV., p. 458, and the symptoms so produced were taken as an indication of its curative powers in cases where such symptoms were produced by disease. It was first included as an allopathic remedy in Martindale's 'Extra Pharmacopœia,' 4th ed., 1885, p. 339. The formula given in the 'American Homœopathic Pharmacopœia' of the same date, 1885, p. 284-285, differs from that given by Martindale in being made from the fresh herb and of greater strength. Mr. J. Britten is of opinion the plant should be called *Gyrotheca capitata*, Salisb., *Journ. Bot.*, 1902, p. 23.

BEE-KEEPING.*

BY SAMUEL T. FROST.

When the honey-season—which varies as to date and length of time in different localities—is over, usually about the end of August in clover districts, and later in heather districts, the honey, having been allowed to ripen on the hive, is taken. One of the best methods of taking the honey is as follows:—Early in the morning of what promises to be a bright, sunshiny day the bee-keeper and two assistants quietly remove the outside covering from the hive, and proceed to cut through the paper which has been placed over the cracks between the first super and the body-box. A few small wedges are then inserted between the two boxes, and a little smoke is puffed through the crevices into the hive. The bees, becoming alarmed, commence to gorge themselves with honey, and when thoroughly gorged they are usually in a very good humour, and may be manipulated easily without much risk of stings. The two assistants then carefully raise the upper part of the hive quite clear of the body-box, while the bee-keeper quickly inserts a Porter bee-escape, which completely stops the bees in the bottom part from coming upwards, but those in the top part can go downwards. The supers are then gently lowered into position again. If the bee-keeper is a tradesman or professional man, and has other business to attend, he may go away with the knowledge that on his return in the evening, provided, of course, that the day continues bright and warm, the bees will all be cleared out of the supers, and he may proceed at once to carry the boxes of combs indoors, where the honey is to be extracted. As may easily be imagined, when the bees which previously crowded the supers have only the body-box in which to shelter for the night, many thousands are unable to enter, hence huge masses hang in clusters around the front of the hive. Of course, if the bee-keeper has the time to spare during the day, there is nothing to prevent the supers being taken right away from the bee-garden into the house or elsewhere for the honey to be extracted as soon as the bees have cleared out; and, as a matter of fact, it is better to do so, because, although there is the possibility that a bee may by chance finds its way back into the supers, the fact that they cannot readily get into the part of the hive where honey is stored causes excitement, which it is better to avoid. And if the full supers are removed at once, empty supers may be placed upon the hive to make room for the bees which would otherwise be crowded out. But for the purpose of this paper it is assumed that the bee-keeper cannot deal with the supers till after business hours. Therefore, when the shop is closed, the bee-keeper and an assistant return to the bee-garden, and as gently as possible separate the supers and remove them one by one into the extracting room. Each super before being taken into the room, however, should be carefully examined to see whether any young bees have been unable to get away, and if so they should be brushed off on to the front board of the hive.

Honey may be extracted from the comb in several ways, but the best and quickest method is by means of a centrifugal machine called an "Extractor." This is a large, round, tin receptacle, standing about three feet high, and having a champagne bottle shaped bottom. A large tap is inserted into the lower edge of the extractor, and in the apex of the cone-shaped bottom a pivot is fixed. Across the top of the extractor a broad iron bar is tightly screwed down, and between the bar and the pivot a square wire cage is suspended, open at the top. By means of a cog-wheel arrangement, the cage can be revolved with extreme rapidity, so that when the bar-frames, which previously contained full honeycombs, are taken from the extractor they are found to be comparatively free from honey, although a little moist.

Before the combs are placed in the extractor, however, it is necessary to "uncap" the honey-cells, which are covered or sealed with a thin layer of white wax. This is really the most tedious and delicate task the bee-keeper has to perform; but it may be greatly facilitated by having near at hand a coffee-pot full of hot water upon a small fire or oil stove, the water being kept at boiling-point. The object of this will be evident when it is remembered that honey, being rather sticky, would adhere to and clog the broad-bladed steel knife which is used to remove the capping from the cells; but if the knife has been immersed in boiling water just prior to use it slips along the surface of the comb easily, and if the knife is manipulated with skill one side of a comb may be "shaved" almost at one sweep, the cappings falling upon a tea-tray or other suitable article.

When the whole of the combs have been through the extractor they are replaced in their former position in the supers, because, being irregular in form, unless put back into the position they occupied before, instead of having a clear passage between the combs, they might touch, and injure each other, and that is to be avoided as much as possible, in view of their being wanted for use again the following year. But before the combs can be packed away for the winter it is necessary that they should be made perfectly dry, otherwise they would not keep sweet. The best way to dry the combs is to place the supers upon the hive they were taken from, so that the bees may clear them of all particles of honey. When dry, the combs are wrapped up in stout paper and stowed away, every precaution being taken to prevent moths or mice from getting to them.

From the foregoing description of the modern method of honey production it will readily be understood that by that system very little beeswax is yielded, because the only source of supply is the "cappings" obtained when extracting the honey, and possibly a few old rotten combs. That applies, however, more particularly to clover honey. In heather districts beeswax is produced, because to extract heather honey the combs have to be broken up and put into a press on account of its density. Still, modern bee-keeping has this advantage over the old system, that much more honey is produced, and it is not necessary to destroy one solitary bee. It is pretty generally known, I believe, that by the old system of keeping bees in straw-skeps, little or no supering could be done, hence the hive soon became glutted with honey, and yet contained comparatively little, and when the honey was taken, while it was possible to "drive" the mature bees from the old hive into an empty one, practically the whole of the young brood—which under the modern system is kept alive, and forms the strength of the colony the following spring—was destroyed. The reason for that will be apparent when it is stated that in order to extract the honey from the comb, the usual practice was to fasten a piece of coarse cloth over a large earthenware vessel, and to slice up into it the whole of the combs, brood and all. I am aware that sometimes thoughtful bee-keepers took the trouble to cut out the brood combs and place them in the hive with the old bees, but that was not the general practice. Extracting honey in that way was a long process, because the honey had to drain away from the mass of comb and brood through the cloth. Moreover, it was impossible to extract anything like the whole of the honey; consequently when the mass was subsequently melted down for the wax, the resultant liquid contained a considerable quantity of honey, and from this liquid, mead, the drink of the Ancient Britons, was made.

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* Read before the Chemists' Assistants' Association, London, on Thursday, January 16, 1902, and concluded from page 84.

Some of those present this evening may be aware that in dealing with that part of the paper referring to supering I confined my remarks to one class of supers only, whereas there are several other kinds, including the "sections" usually sold for table purposes, to be eaten in the comb. But my purpose was to show how honey may best be produced in quantity, and not artistically. Of course, when sections are used it is advisable to take them off as soon as they are filled, to prevent soiling from propolis, the great heat generated below, and from being travel-stained.

I may also point out that in referring to the taking of the honey I omitted to mention whether the body-box was also robbed of its store. When honey is scarce owing to a bad season, the bee-keeper does remove the outside combs for the purpose of extracting what honey they may contain; but the usual practice is to leave the brood-chamber alone, so that the honey contained therein may serve as food for use by the bees during the winter. Sometimes, however, that is not sufficient, particularly if the winter is very mild and the bees are able to get out occasionally; consequently the bee-keeper prepares bee-food, consisting of a thick syrup of sugar and water, with a dash of vinegar, which is placed in a special kind of "feeder" over the hive, from whence the bees can carry it down at leisure.

There are many other interesting things to be said about bees, if time would permit, but I will not weary you with them now. One rather amusing incident is worthy of mention, I think, as it may be of some importance should a pharmacist at any time be prosecuted for selling honey containing glucose. It may also be of importance in the event of a prosecution for selling beeswax containing paraffin wax to remember that a possible source of adulteration may be the comb-foundation.

On one occasion when extracting a quantity of honey late in the season I was surprised to find in some combs what appeared to be pink-honey, in others a red-coloured liquid. For some time we were unable to explain this appearance, but it afterwards came to our knowledge that at a certain confectionery—or toffee—works a short distance away, for several weeks the workpeople had been compelled to cease work in the day-time, and to work at night, on account of the multitudes of bees which visited the place; and it was stated that large quantities of syrup intended for the manufacture of sweets had been carried away—hence the coloured honey. Being rather interested in the matter, we kept watch, and it was not long before we noticed that between the apiary and the confectionery works there was a broad stream of traffic, so to speak, going and returning, the bees on the homeward journey being extremely heavy laden. Since I have been in London a friend who is a bee expert, certified by the British Bee-keepers' Association, has been threatened with an action for damages by the proprietor of the works in question, on account of the loss and annoyance caused by bees, but up to the present nothing has been done in the matter. So far as we could learn, the bees visit the works only during a bad honey season, when there is little or nothing to be gathered in the fields, or late in the autumn. At other times stray bees only are seen. It is also during a barren season that the bee-keeper is troubled by robbing. The bees, finding nothing in the fields, begin to prowl around nearer home, and commence to rob each other. When that happens it is woe betide the weaker colonies, for the stronger stocks enter their hives, kill the whole lot, and steal their honey. Another point I should also like to mention—viz., that the much-abused drone is not so bad as he is usually painted. The drone is generally described as a lazy, good-for-nothing fellow, who, because he will not work, is driven out of the hive to starve. Personally, I rather sympathise with the drone. It may not perhaps be generally known, but the drones really perform a very important function in the hive. They are not only necessary to fertilise the queen, but they are also very necessary to the well-being of the young bees; for with their huge bodies they cover the brood-combs and keep the young bees warm while in the grub stage, it being very essential that the heat of the hive be kept up during the breeding season, and without the presence of the drones that could not always be done. Therefore it seems rather hard lines that at the end of the season they should be driven out as worthless good-for-nothings, and be left to starve. Yet such is the case, and I am afraid a somewhat similar proceeding sometimes obtains among human beings

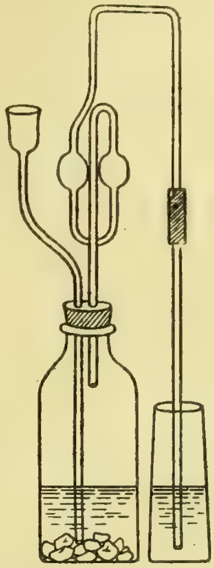
In conclusion, I would like to say that the life of a bee during the honey season is not only of short duration—a few weeks at most—but when honey is plentiful and the weather favourable, I have noticed great numbers of bees crawling on the ground around the hives, with their wings literally worn into shreds, so that they could no longer fly, and, worse still, they were denied entrance to the hive, the sentinels which kept guard at the doorway expelling them in the same brutal fashion as the drones. This is, however, but another illustration of the principle of the survival of the fittest.

My thanks are due to Messrs. James Lee and Son, 10, Silver Street, High Holborn, W.C., for the specimens of bee appliances exhibited.

GAS-WASHING APPARATUS.

BY F. H. ALCOCK.

The common form of wash bottle for purifying such gases as SH_2 seems sometimes to be superfluous or in the way, and many suggestions for a more convenient and compact apparatus have been made. The following sketch will show a useful form of generator and wash-bottle combined, which has answered very well, and been in use in small laboratories for some time past. Briefly described, the washing compartment consists of a glass two-bulb syphon safety funnel, with the thistle head cut off, and the upper part of the tube bent round, so that by rubber tubing the delivery pipe may be conveniently attached when required for use. The syphon part is charged by suction with a suitable quantity of water (for washing) or sulphuric acid (for drying), or sodium or potassium hydrate solutions (for absorption), or other solutions for purification of the gas generated.



POISONING CASES AND INQUESTS.

PRUSSIC ACID.—An inquest was held at the Marylebone Coroner's Court on Wednesday morning, February 5, before Dr. Danford Thomas concerning the death of Mr. William Martindale (61), pharmaceutical chemist, 19, Devonshire Street, London, W., which occurred on Sunday, February 2.—The Coroner said this was a peculiarly sad case. Mr. Martindale was a chemist who had occupied a prominent position in pharmaceutical circles. He had not been quite well for some little time, although not seriously ill. He was at his usual occupation during the Saturday, and about 10.30 p.m. he went upstairs for the purpose of going to bed. He slept alone that night, and the next morning he got up and went down to his study, where he was found some time later lying upon a couch, apparently very ill, and before the arrival of a doctor who was summoned he was dead.—Dr. William Harrison Martindale, son of the deceased, stated that he last saw his father alive about five o'clock on Saturday, February 1, when he seemed very cheerful. He had been about his business as usual, and had also been engaged upon a Parliamentary Committee which was at present considering the subject of the sale of poisons. He had been working very hard, and had taken a very active part in the matter. He was always a great worker and had enjoyed fairly good health, but latterly he had suffered from nervous depression, caused by overwork. On the Sunday morning he received a message, and on arriving at his father's house he found that his father was dead. He heard that a bottle of poison had been found, together with a note.—In reply to the Coroner, Dr. Martindale said his father had sometimes thrown out hints, but they never thought that he was likely to do anything to himself.—The Coroner: Supposing it to be his own act, the cause would be overwork? —Dr. Martindale: Yes.—Ellen Kemp, a servant in the employ of the deceased, stated that she saw Mr. Martindale on Saturday, and did not notice anything wrong with him. On Sunday morning about 7.35 she heard him come downstairs and enter his study. A little later she went into the room and found him lying upon a couch partially dressed. As he seemed to be ill, she called her mistress, who sent for Dr. Ringer. She heard subsequently that Mr. Martindale was dead.—Dr. Ringer, 15, Cavendish Place, W., stated that he had known Mr. Martindale intimately for forty or fifty years. He was a great worker, and had lately been engaged upon the Privy Council's Poison Committee, and had taken a great interest in the work of the committee. He was with Mr. Martindale on Friday or Saturday, and had attended him professionally. He was suffering from overwork and depression, there being nothing wrong physically. He was called to the house on Sunday morning, and found that Mr. Martindale was dead. He found a bottle (produced) upon which was a label marked "Caution.—Poison," and below that the words "Prussic acid." There was also a glass found near at hand, together with a letter. Death was due to syncope caused by prussic acid poisoning.—The Coroner said the letter referred to was addressed to his wife. He complained in the note of his "fagged brain," which did not permit him to grasp his work. He asked forgiveness for the trouble and pain he was about to cause, and said that he could not go on any longer. That was all the letter contained, except that he returned thanks to a gentleman who had assisted him with his work in connection with the Poisons Committee. Addressing the jury, the Coroner said the facts of the case were very simple. It was one of those cases where a man of great intellect had worked away for many years, and at last a little overwork had put the balance of his better judgment on one side. He was sorry to have to say that he had talked about this matter sometimes, but his family never thought that he would take his own life. At the time his mind must have been overbalanced by work, and was unsound for the moment.—A verdict in accordance with the medical evidence was returned.

PRUSSIC ACID.—At Bury, a chemist's apprentice named Robert Williams (19), has died from prussic acid poisoning. The medical evidence showed that deceased must have taken the whole of the contents of an ounce bottle. It was not stated how deceased came into possession of the poison, but the stock at the shop at which he was employed did not appear to have been touched.

NICOTINE INSECTICIDE.—At an inquest held in the North Stafford Infirmary, on January 30, Thomas Bullock (60), of Stoke, was shown to have died from the effects of an insecticide containing nicotine, which he had drunk in mistake for beer. The insecticide closely resembled beer in appearance, and had been supplied by a firm of florists, in an old brandy bottle which was not labelled so as to indicate the dangerous nature of the contents. The manager of the firm said he did not know the preparation was poisonous, as the manufacturers had not indicated that fact on the vessels in which it was sent. Ultimately the jury returned a verdict of "death through misadventure," and requested the Coroner to communicate with the authorities, pointing out the danger of selling the insecticide without labelling it poisonous.

LAUDANUM.—At Downham on January 18 an inquest was held on the body of Mary Ann Crawford (64), who had been in the habit of taking a mixture which contained laudanum, and was found unconscious in bed, apparently under the influence of the narcotic. The medical evidence showed that deceased had heart disease of long standing, and that death was accelerated through taking laudanum. The jury returned a verdict in accordance with the medical evidence.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

SPIRIT OF NITROUS ETHER.

At Settle Police Court on January 28, Isabella Ralph, grocer, was charged with selling sweet spirit of nitre which was not of the British Pharmacopœia standard of strength. The analyst's certificate stated that the sample contained 0·64 per cent. of ethyl nitrite, 98·85 per cent. of alcohol and legitimate water, and 51 per cent. excess of water. The prosecution did not allege any intention of fraud and, for the defence, Mr. Brayshaw, solicitor, urged in mitigation the volatile nature of the drug. The Bench imposed a fine of 1s. and £1 3s. 6d. costs.

SPIRIT OF NITROUS ETHER AND MILK OF SULPHUR.

At Boston Borough Police Court, on Friday, January 24, Wm. Lamplugh, chemist and druggist, Wide Bargate, was charged with selling sweet spirit of nitre which was deficient in nitrous ether to the extent of 87·5 per cent., and also contained 28 per cent. of excess water. He was also charged with selling milk of sulphur which contained 56·5 per cent. of milk of sulphur and 48·5 per cent. of calcium sulphate.

Defendant admitted selling the articles, but said he sold them in the condition he received them from the wholesale house.

The Magistrates said they were convinced defendant had no intention to defraud the public, but a technical offence had been committed, and he would be fined 5s. and 8s. 6d. costs in each case.

Medicine Stamp Acts.

At Bow Street Police Court, on January 30, before Sir A. de Rutzen, George Squire Boutall, chemist and druggist, was charged with selling medicines without having the Inland Revenue stamp affixed, at his branch establishments—the Pharmacy, Holborn; 239, High Holborn; 98, Strand; 5, Green Street; and 3, Newcastle Street. Mr. Uniacke, who appeared for the Board of Inland Revenue, explained that there were seven summonses in all, on each of which the defendant was liable to a penalty of £10. The medicine was bought on different dates. The price marked on the bottles in which it was supplied was 1s. 1½d., but in every case the article was sold unstamped for 1s. There were two convictions for similar offences against the defendant.

Mr. Timbrell, for the defence, admitted that a technical offence had been committed, but said it was due to the negligence of the employees. The defendant himself had been incapacitated from duty since September last as the result of an accident, and he had had to leave the conduct of the business in the hands of his servants. Hitherto stamps had been supplied to the assistants at the branch shops, but in future all the stamps would be affixed before the medicine left the manufactory.

The magistrate found the offences proved, and imposed fines and costs amounting in all to £18 4s.

Acetylene Company's Patent Action.

In the Chancery Division on February 4, Mr. Justice Buckley concluded the hearing of the case of the Acetylene Illuminating Company, Limited, *v.* the United Alkali Company, Limited. It was an action brought by the Acetylene Company for an injunction to restrain the United Alkali Company from manufacturing, selling, or supplying in this country calcium carbide manufactured according to Wilson's specification No. 16,705 of 1894.

His Lordship, in giving judgment, said the action was brought upon four patents, but three had been abandoned at the Bar, and the plaintiff company had elected to go on on one only—Wilson's patent of 1894. That was a patent for improved metallic carbides suitable for producing acetylene gas and the means of producing the same. The defendant company denied the validity of the patent and denied the infringement. In his judgment they were entitled to succeed on both those issues. He might have disposed of the case upon the issue of infringement alone, but the parties were desirous of using the action for the purpose of deciding the validity of the patent. He, therefore, dealt with both issues. In his opinion the patentee plainly meant a furnace working by means of an electric arc as distinguished from a furnace. Upon the true construction of the patent the patentee had claimed the use of an arc furnace for the reduction of his metals, and it was the heat that was got from an electric arc that was necessary for the proper working of his patent. In his opinion neither of the suggested inventions could be claimed by the patentee. The defendant company never got an arc at all, therefore there was no infringement. The action failed on both grounds, and must be dismissed with costs.

ROYAL INSTITUTION.

The usual weekly evening meeting of the members of the Royal Institution was held on Friday, January 31, when the chair was occupied by Lord Kelvin. A discourse was delivered by Professor Crum Browne, who took for his subject the

Ions of Electricity.

Dealing with the subject more especially from the historical point of view, the lecturer said that his subject was one which would have special interest for a Royal Institution audience, the pioneers of the subject having been intimately connected with the Institution. At the beginning of last century Davy succeeded in decomposing the alkalis, which had until then been regarded as simple bodies. Much is due to Faraday, who studied the phenomena of electrolysis and did so much towards their true explanation. It was he who, in 1833, whilst Professor of Chemistry at the Royal Institution, first observed the fact, and formulated the law, that when the same current acts on several electrolytes, the weights of the elements separated by electrolysis are proportional to their equivalents. The mechanism of electrolysis was for some time a puzzle, and Clausius, who devoted much study to the subject of molecular agitation of bodies, supposed that the molecules of all bodies are in a constant state of agitation; and therefore in a fluid apparently at rest the molecules were constantly changing position, and coming into collision with each other, and thus becoming separated and changing partners. This process is supposed to go on at all times, and when a disturbing influence such as a current of electricity is introduced some of the partners, or ions as they are called, are attracted to one pole and some to the other. Those ions having a positive charge—the anions—being attracted to the negative pole or kathode, whilst the negatively charged kations were attracted to the anode. Hiltorf proved that the ions actually migrate from one pole to the other. The rate of motion depends on the friction exerted by the solvent; when the temperature is raised the friction is less, and consequently the conductivity is greater. The lecturer then showed an experiment to demonstrate the influence of dilution of the solvent. A strong solution of silver nitrate—about four times normal—was poured into a vessel, the sides of which were connected with a small battery; a mirror galvanometer of low resistance which was connected with the circuit showed that scarcely any current was passing. Distilled water was then added, and, up to a certain dilution, the conductivity increased enormously, but after that point had been reached very little more effect was produced by further dilution. The lecturer remarked that in such experiments the slight conductivity of water might be neglected. But in very dilute solutions this was the great difficulty, as absolutely pure water was most difficult to obtain. Another interesting experiment to show the actual travelling of ions was performed, using Lodge's direct method by means of coloured ions. A small U-tube, similar to one used in experiments on the electrolysis of water, was partially filled with permanganate of potash solution; this was saturated with urea to give sufficient density to the liquid to prevent it from readily mixing with the other solution. A solution of potassium nitrate of the same conductivity was added carefully; a current of electricity was then passed, when it soon became evident that the pink ions of the permanganate were travelling in one direction, whilst the colourless ions of potassium were going just the opposite way. The ions of a dibasic acid were then discussed. In dilute solution sulphuric acid ionised into H and HSO_4, a behaviour quite in accordance with our chemical knowledge. Experiments on this subject had led to Dr. Marshall's discovery of the persulphates. The production of potassium persulphate by the electrolysis of potassium hydrogen sulphate was demonstrated. Goldberg had pointed out that the addition of sodium acetate to acetic acid greatly diminished its effective acidity. Two solutions of ferric acetate in dilute acetic were taken, to one a solution of sodium acetate was added, and sufficient distilled water added to the second to bring it to about the same dilution. Solution of hydrogen sulphide was then added to each, when a characteristic black precipitate was produced in the solution to which sodium acetate had been added, whilst scarcely any darkening in colour was observed in the other solution. The lecturer concluded by saying that if he were asked whether the theory of electric dissociation were true, he would reply that it was an eminently satisfactory theory, and one which explained many otherwise inexplicable phenomena.

NOTES IN PARLIAMENT.

"Infamous Conduct in a Professional Respect."—The Home Secretary was on Monday questioned by Dr. Macnamara as to the case of Dr. Rendall, of Great Yarmouth. The question recited that "on November 28, 1901, Dr. Rendall was summoned before the General Medical Council and deemed by that body to be guilty of infamous conduct in a professional respect, on the ground that he held an appointment as Medical Officer for the Liverpool Victoria Legal Friendly Society, which canvassed for members, and which has been established sixty years, is duly registered under the Friendly Societies Act, and comprises a membership of two and a-half millions." Dr. Macnamara wished to know whether the right hon. gentleman would take the opinion of the Law Officers of the Crown with the view to ascertaining whether the General Medical Council have power under the Medical Acts to declare a properly qualified medical man holding such an appointment guilty of infamous conduct, and thus be able to erase his name from the Medical Register.

In His Reply, the Home Secretary declined to enter into details of the particular case referred to, as he understood that it was still, in a sense, *sub judice*. He was advised, however, that the powers of the General Medical Council as to deciding what was and what was not "infamous conduct in a professional respect" within the meaning of the Medical Act were clearly laid down by that Act and in the decisions based upon it. Therefore he saw no necessity for consulting the Law Officers of the Crown. Later, in answer to a question by Mr. Caldwell, Mr. Jesse Collings stated that the powers of the General Medical Council as to deciding what is or is not infamous conduct in a professional respect under the Medical Act are governed by the terms of that Act, and the decisions thereunder. The Home Secretary had no power to interpret them. The right hon. gentleman added, in reply to the final question, that as the subject of the sale of poisons is now being considered by a committee, the recommendations of that body must be awaited before any decision as to legislation can be arrived at.

Scheduled Poisons.—Quite a long series of questions on the law relating to the sale of scheduled poisons was put to the Home Secretary on Monday by Mr. Caldwell, who was informed by Mr. Jesse Collings that any unqualified person who sells poison is liable to prosecution, but that there is no provision in the Pharmacy Acts for making the employer responsible for the acts of his apprentice or assistant, except in the case of a breach of the regulations to be observed in the sale of poisons.

Bovine and Human Tuberculosis.—From a reply made by Mr. Grant Lawson to Mr. Channing, on Monday, it appears that we may have to wait a considerable time for the report of the Commission appointed to report on Prof. Koch's theory that bovine and human tuberculosis are distinct diseases and incommunicable. Very extensive experiments will have to be carried out by the Commission, and for this purpose laboratories and other buildings have been erected on the farms where this part of the work is to be done. It is impossible to say how long these experiments will take, but arrangements have been made for the Commission to occupy the farms for three years.

Tuberculosis in the Post Office.—Sir W. Foster has questioned the Secretary to the Treasury, who represents the Postmaster-General in the Commons, as to the report of the Association of British Postal Medical Officers on the prevalence of tubercle among postal employees. Mr. A. Chamberlain replied that some of the preventive measures suggested in the report are already in operation. He added that statistics supplied by the Registrar-General show that the rate of mortality from phthisis and cognate diseases between the ages of fifteen and sixty-five is much greater in the country at large than amongst the established employees of the Post Office, and there is no reason to think that persons in the Post Office service are more subject to this disease than others.

The Small Pox Epidemic.—A Bill to amend the Vaccination Act, 1898, has been introduced in the House of Lords by Lord Newton. In the Commons Mr. Broadhurst has also introduced a Vaccination Bill. But whatever the objects of these measures, there is at present no likelihood of new legislation this session. Meanwhile, however, numerous questions continue to be addressed to Ministers, notably to the Home Secretary and the President of the Local Government Board. They have related to the vaccination of tramps, the charges for vaccination exemption certificates, and similar details of administration, but hardly call for fuller mention here.

Registration of Firms.—A Bill for the registration of firms and of persons carrying on business under trade names has been brought in by Mr. Emmott in the Commons, and read a first time.

LETTERS TO THE EDITOR.

The Preparation of Compressed Tablets.

In response to "An Ordinary Pharmacist," who solicits comments or suggestions *re* the preparation of compressed tablets, I can testify that the "Freck" is unquestionably a very ingeniously constructed machine. When properly set, the dosage is worked out with almost mathematical precision. It has, however, a few weak points, two of which I should like to note. Why does the lever terminate in a round knob? Is not such a handle about the worst to grasp for the purpose of applying pressure? In compressing a batch of several hundreds of tablets I found the knob-handle very unsuitable, the palm of the hand being sore for several days. I wound a narrow cotton bandage round the lever, so as to make the grip cylindrical, and this answers the purpose fairly well. The manipulation of the handle is very irksome from another cause, namely, want of balance. It is a heavy handle, and after being raised to throw out a tablet, it must be lowered to a certain position; if too high, the next tablet made is too small; and if too low, the edge of the upper die is very apt to be damaged by the funnel. A spiral steel spring with one end attached to an arm projecting from the back of the handle, and the other end to a hook screwed into the stand on which the machine is fixed, is the remedy I adopted. The arrangement works well, and enables the operator to turn out 20 or 25 per cent. more tablets in a given time. I am sending herewith two or three of my compressions.

Edinburgh, January 29, 1902. J. A. Forret.

Division of the Minor Examination

As I am one of the latest additions to the ranks of the Minor men, I am naturally very interested in the subject of dividing the examination, a subject which seems at present to be very much to the fore. In the Journal of February 1, 1902, no less than three chemists' associations are reported as having mentioned or discussed the point, viz., at Liverpool (Mr. H. Wyatt), Plymouth (Mr. Roper), and Newcastle (Mr. Barry Noble). In the only instance of voting on the subject (Plymouth) the idea of dividing the examination was thrown out. To come to my own case, I was twice plucked on account of my first day's work. Each time I came down the conviction was more firmly driven home to me that it was quite time the examination was divided. The terrible tales which had been hoisted into me by men who had come down over their second day's work convinced me that it was an utterly impossible task for anyone to carry sufficient knowledge about with him to enable him to pass both days within about a fortnight.

At the third attempt I passed both first and second days. Between the two days was a space of one week, and in that time I worked harder than I had ever done before during my studentship, rubbing up what I had learnt before but got rusty in. I do not think now that the amount of knowledge necessary for both days is beyond the capability of anyone. On the contrary, I would wish to tell every student who is daily being terrorised by plucked ones that he has nothing to fear if he has been even moderately studious. My circumstances may seem bad enough to give anyone hope. It is only two years next April since I passed my Preliminary Examination. I was then just at the end of my apprenticeship. This was a very bad beginning, as I ought to have been working for my Minor through my apprenticeship. I joined a Pharmaceutical College in London in August, 1900, working there two mornings a week, and in October of that year I started working five mornings a week. The mornings lasted from 9.30 to 1. At this time I knew absolutely nothing about any subject except the modicum of chemistry which was left me from school five years before. All my work I learnt in this school, working there only in the mornings. I went up for examination in July, 1901, and in October, 1901, failing each time in dispensing. This, of course, was not the fault of the school, but because I had not done sufficient dispensing during my "time." I did not attend college again after October, but kept up my theoretical work at home. I went two evenings a week to the City and Guilds Technical College in Leonard Street, Finsbury, to keep my practical work from rusting. I entered again in January, and passed. It is only fair to say that I did no shop work while working for my examination.

I cannot see why, if the examination can be passed with as little effort as this, there is any need to divide it. Surely fifteen months' study is not a very great thing. The school teacher in a Board School has to take one examination a year for six years in succession. If he fails one year he has to wait twelve months before he can try again. His subjects are more numerous than ours, and, when he has finished them all, he hasn't the social standing in a town that the chemist has. Besides these compulsory exams., there are those in science and art subjects under South Kensington which every elementary teacher takes year after year. And yet, in spite of these and the fact that he has to be teaching all day and every day as well—terribly brain-fagging work—no one speaks of dividing his exams. If, therefore, the Minor is to be divided, let it be made more difficult. Let similar subjects be taken together—botany with materia medica; theoretical and practical chemistry; pharmacy, dispensing, and prescription Latin. But let them all cover more ground. Instead of judging a man's experience in dispensing by his ability to make five or six prescriptions up in three hours, give him a day in which to let him make a sample of everything, from mixtures to suppositories, and from cachets to pills and plasters. At present the dispensing exam. generally shows what a candidate cannot do. If he had something in each branch of dispensing, it would give him a chance of showing what he could do. Let chemistry have more connection with the chemicals he meets with in the trade, and how they are manufactured. Extend the subject along these lines. Let botany be intimately connected with materia medica. Draw up the syllabus in such a manner that they must be taught and learnt together. But, seeing that pharmacy, dispensing, and prescription Latin are the subjects upon which a chemist should always be fully informed, let him pass in these every time. If he passes in either of them once, do not let it count unless he passes the other subjects too. Let it be in the position of the first day now. It is pharmacy that, after all, makes the pharmacist, and let it always be understood that, unless a man is ready to pass at any time an examination in the work which will be his daily portion in business, he is unfit to be a qualified man. Divide the rest if you must. It would be better, perhaps, for the assistant, but make pharmacy, theoretical and practical, a *sine quâ non.*

"Cornubian" (117/49).

Protection of Prices No Security for Profits.

The maintenance of a barrier against senseless and extreme cutting of prices is an object of perennial interest to the retail trade. Recently the movement towards this end would seem to have been gaining strength by the adhesion of new and important wholesale firms as members. But it would be very unwise to build upon this foundation any assurance of future well-being for the retailer. The minimum selling prices may be loyally observed, even by reputed cutters; but there is no safeguard against the Punic faith and relentless greed of the manufacturer, who thinks fit to appropriate to himself the margin of profit thus created. Take, for instance, Invalid Bovril, which was put before us as "the chemists' article," with the mystic letters P.A.T.A. duly appended in wholesale price-lists, and all the rest of it. I swallowed the bait myself, displayed the article, spoke well of it to my customers, disfigured my window with glaring red placards, and saw with satisfaction a steady trade created in it. The Bovril Company has rewarded me by advancing the invoice price 2s. per dozen, making a charge considerably higher than the quotations in different wholesale lists. Thus the company coolly robs the retailer of every farthing of profit, as distinguished from the necessary margin of working expenses. Remonstrance proves futile; complaint is equally so; but the experience may prove instructive.

Dover, January 25, 1902. J. F. Brown.

Mucilage of Acacia as an Excipient for Valerianate of Zinc.

I quite agree with Mr. P. Pain when he says the above gives rise to complaints, also that the fault lies with the excipient. I have frequently had them to dispense, and after trying various excipients, such as a mixture of mucilage of acacia and syrup of glucose, acacia and rectified spirit (which requires rolling briskly), glycerin of tragacanth, and others, have come to the conclusion that the best excipient of all for this drug is powdered tragacanth and syrup of glucose. For every grain of valerianate I use one-third of a grain of tragacanth; using sufficient syrup of glucose to make a uniform mass, then rolling briskly, gives a pill which has always, and in every respect, proved highly satisfactory.

London, January 28, 1902. J. H. Shuttleworth.

Abnormal Oranges.

A note in the *Gardeners' Chronicle* for January 25 throws some light on the occurrence in commerce of mixed oranges, some of which contain a second orange inside the rind of the usual one. It appears that oranges from Alcira, a town in the South of Spain, are abundant in the market at present, and about 10 per cent. of the fruit possess this curious abnormality. The trade mark of this brand of orange is a scythe, but the boxes contain a mixture of varieties, about 30 per cent. being seedless. The Ladoo orange of the Deccan is said also to possess the same peculiarity.

Sevenoaks, January 28, 1902. E. M. Holmes.

Proceedings Under the Pharmacy Acts.

The case against Mr. W. R. D. White is not a question of either dignity or technicality, it is a question of right or wrong. The Pharmaceutical Society is empowered to administer the Act of 1868 without fear, favour, or prejudice. Section 17 of that Act distinctly states that the label shall bear the name and address of the seller of the poison. Mr. Lane's recent decision in the Squire case is quite in accordance with the letter and spirit of the 17th Section, and whilst in the White case both name and address are in contravention of that section, it seems strange that the Council did not follow up the advantage it has of a clear interpretation of the section on the question of the name, at the same time as it prosecuted on the address. To the disinterested observer it appears that either the section should read "the name, or alias, of the seller," or the Council is committing itself to a policy of half-measures. With all due respect and sympathy for the Council, I feel that if we could get a clear definition of our exact statutory position we should be much nearer to a solution of those incidental difficulties about which we hear so much, and which seem to have brought our calling into both internal and external disrepute.

Batley, February 4, 1902. R. Broadhead.

"Per Sutton."

Since the firm of Sutton and Co. contracted to deliver my goods, I notice on all invoices a booking fee of twopence for goods supplied under a certain amount. If this fee is exacted by Sutton I regard it as an imposition, knowing as they must that the burden of it falls upon me, as it does in such a manner that their charge becomes nominal, since the total of booking fees greatly exceed the contract charge. I would like to know the attitude of chemists who contract with this firm, and also whether the same farcical system obtains with other carriers. The suggestion made to me to demand deduction from wholesale houses hardly appeals to one, presuming that they prepay this amount.

Winchester, January 29, 1902. S. G. Bartlett.

Calcium Phosphate, its Composition and Impurities.

A typographical error crept into the reprint of our paper on calcium phosphate last week (see p. 86). The quantity of $CaSO_4 2H_2O$ should read 9·5 per cent.

R. C. Cowley and J. P. Catford.

Liverpool, February 4, 1902.

*** The error was due to the indistinctness of the figures in the typewritten copy supplied.— Ed. *P.J.*

REPLIES TO CORRESPONDENTS.

QUERIES.—**Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders.**

Poisoning by Areca Nut (E. N.—69/24).—Full particulars of the case to which you refer appeared in the *Chemical News* for December 18, 1896, and a brief summary was published in the *P.J.* for December 26, 1896.

Ung. Hyd. Nit. Ox. (F. S.—69/27).—(1) It is an old name for ointment of red oxide of mercury. Unguentum hydrargyri nitrico-oxydi, Lond. Ph., 1851, was prepared by rubbing red oxide of mercury, in very fine powder, 1, with a mixture of white wax, 2, and lard, 6. (2) It does not follow that the term was used in any special technical sense. The surgeon may simply have meant that the case would be a troublesome one to deal with.

Black Enamel for Cycles (F. W. S.—69/25).—You will find it much more satisfactory to buy the enamel of a manufacturer. If, however, you are anxious to try the experiment of making it, mix one part of boiled linseed oil with four parts of oil of turpentine, add to the mixture one-third its weight of asphaltum in small pieces, and leave the whole in an oven or other warm place for about a week. You must shake or stir the mixture at frequent intervals and, finally, pour off the clear liquid from the undissolved asphaltum.

Glasgow Pharmacies (McD.—118 17).—Mere statements, however frequently reiterated, prove nothing. The Pharmaceutical Society does not employ agents to detect offences under the Pharmacy Acts, and if you know for a fact that poisons are illegally sold in pharmacies, you should send particulars of specific instances to the Registrar, 17, Bloomsbury Square, London, W.C. You need have no fear of your identity being disclosed in the course of any proceedings which may follow.

Claret Stain on Dress (W. B. D.—69/26).—You will find it difficult to remove the stain entirely, but you may be able to effect the desired result by moistening the spot with a mixture of equal parts of solution of chlorinated soda and water, then exposing the moist fabric to sunlight and subsequently washing —first with water and afterwards with dilute solution of sodium thiosulphate. Sulphurous acid may also be tried, or a powder named "Aiagin," which is supplied for removing such stains by Messrs. C. Richter and Co., 90, Great Russell Street, London, W.C.

THE LATE WILLIAM MARTINDALE.

BY ONE WHO KNEW HIM IN EARLY DAYS.

William Martindale was the third son of Mr. Richard Martindale, farmer, of Stainton, near to Carlisle. In 1856 he went as an apprentice to his uncle, William Martindale, who had a large business in the Market Place of Carlisle. On his uncle's death, in 1858, he went to and finished his apprenticeship with the late Mr. Andrew Thompson, English Street, of the same city, and a loyal supporter of the Pharmaceutical Society, with whom he kept on terms of intimacy till his death in 1899. At the expiration of his apprenticeship he was not in very robust health, and went to the South Coast for the benefit of his health. After this he settled in London, and I think since then his career will be well-known to all. I may say I frequently saw him, and many were the chats we used to have on things pharmaceutical ; and it was always a pleasure to see Martindale, and his death leaves a blank I am afraid not to be filled up. Of late he has not been up to his usual form, and the frequent holidays he has been obliged to take on account of his health tell their own tale. His death will be a great loss to pharmacy and to his many friends, and I personally feel it such. It is only now and then that we have such men raised up, and we should carefully treasure them for their own sakes and as patterns for our younger men. I think I am right in saying that it was chiefly by hard work and perseverance, always keeping pegging away, he attained his very exalted and honoured position.

Pharmaceutical Journal

SATURDAY, FEBRUARY 8, 1902.

A Copy of this Inset is inserted in every Copy of the *Pharmaceutical Journal* issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. The Inset can also be obtained by personal application, on the day of publication.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

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Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

JUNIOR wanted; one with some knowledge of Dispensing preferred; indoors.—J. WILSON, 11, George St., Bath.

JUNIOR; qualified preferred, not essential; well up in dispensing and good retail.—Mr. DANIELS, 15, Hill Rd., Wimbledon.

JUNIOR or IMPROVER wanted (indoors).—State usual particulars and enclose photo to G. CRAWSHAW, Pharmacist, Hyde Park, Leeds.

WANTED, second ASSISTANT, qualified; two Assistants; indoors.—Apply, UTTON BLYTH, Dispensing Chemist, 21, High St., Sutton, Surrey.

WANTED, DISPENSER (qualified) for high-class Branch Store.—State age, height, salary required (outdoor), references and enclose photo, to WAND, Cash Chemist, Haymarket, Leicester.

JUNIOR ASSISTANT wanted at the end of the month, about 20; a good opportunity to acquire a knowledge of a good Retail and Dispensing.—For particulars, apply to W. T. 126, Upper St., Islington, London, N.

SURGICAL INSTRUMENTS & SUNDRIES.—Wanted, a first-class MAN to take charge of a Surgical Instrument Department.—Apply by letter, stating age, salary, experience and references, to AYRTON & SAUNDERS, 34, Hanover St., Liverpool.

WANTED, qualified LADY CHEMIST, to supervise the putting up of high-class pharmaceutical preparations.—In applying, full particulars of experience, age, and salary required must be given to L. C., Pharm. Journal Office, 8, Serle St., W.C.

WANTED, a gentlemanly IMPROVER or JUNIOR ASSISTANT (indoors), for a light Retail Dispensing and Photographic business; situation vacant February 24th.—Apply, with photo and salary required, G. COVERDALE, Chemist, 23, Parliament Street, York.

Assistants Wanted—Continued

WANTED, qualified GENERAL MANAGER for large and important London Store Chemists; age 30 to 35; previous experience of management on a large scale indispensable.—Write only, stating terms, to PHARMACY, c/o Willings, 162, Piccadilly, London, W.

INDIA.—Required, a qualified ASSISTANT, about 24, single, with first-class London experience and of good address; 4 years' agreement; liberal salary; passage out and free furnished apartments.—Apply, by letter, C. M., c/o Messrs. Meggeson & Co. (Lim.), 14, Miles Lane, E.C.

AN energetic ASSISTANT to carry on an old-established high-class business; must have had good class and store experience; Photographic knowledge essential; knowledge of French preferred; salary £120 currency and commission.—State age, height, and experience, with photo enclosed, to DAVIES, Chemist, Mill St., Guernsey.

WANTED (in or outdoor), an experienced DISPENSER, as Third Assistant in a light-class business doing in surgical instruments and appliances, ophthalmic optics, and photographic store materials.—Details of experience as, when, where, &c., and references, for use by arrangement only, to J. GRIFFITHS RICHARDS, Hastings.

CAPE TOWN.—Qualified ASSISTANT wanted for firm of Chemists; not over 25 years of age; salary £12 per month first year, £13 10s. second, and £15 third year; room supplied, but not board; second-class passage paid; three years' agreement.—Apply, stating experience, to P. J. P., c/o Messrs. John Murdoch & Co., 52, Leadenhall St., E.C.

KILBURN DISPENSARY, London, N.W.—Applications are invited for the post of RESIDENT PHARMACIST, minor or major qualification (latter preferred); the Institution provides rooms, light, fuel and attendance; Salary £90 per annum.—Applications and copies of recent testimonials must be received by the Hon. Sec. not later than Friday, 28th inst.

Continued on next page.

Assistants Wanted—Continued

INDIA (N.W. Province).—Wanted a good Assistant, well up in all branches of a Chemist's business; minor qualification; salary—1st year 150 rupees per month, 2nd year 175 rupees per month, 3rd year 200 rupees per month; free furnished apartments; second-class passage paid out; required to start early in April; candidates must hold undeniable references.—Address, India, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CAPE COLONY.—Wanted, good Assistant, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £140; second year, £150; third year, £160; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, Cape, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified Assistant; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to Straits Settlements, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

ONE day weekly and occasional duty.—Collins, 30, Sydnor Rd., Stoke Newington.

LOCUM, M.P.S.; town or country; disengaged.—W. Smith, 12, Westfield Rd., Surbiton.

MANAGER, Locum or Dispenser; qualified.—S., 7, Oakden St., Kennington Rd., S.E.

ASSISTANT; outdoors: London; time for study.—Weston, 54, Hillmarton Rd., Holloway, N.

LOCUM; qualified; 29; abstainer; London experience.—Green, 23, Eddiscombe Rd., Fulham, S.W.

QUALIFIED; 22; Dispensing business; outdoor Lowe, c/o Richardson, Chemist, Central Beach, Blackpool.

DOCTOR'S Dispenser and Book-keeper; experienced; qualified; single.—Chemist, 77, Bristol St., Hulme, Manchester.

LADY Dispenser and Book-keeper desires re-engagement in or near London.—Apply, Hogg, 5, Fairfax Rd., Hampstead, N.W.

TEMPORARY Manager or Branch permanency; experienced Prescriber; qualified.—Chemist, 32, Laurel Grove, Penge.

LADY Dispenser, qualified, Apothecaries' Hall, requires engagement in or near London.—Apply, Horwood, 185 King's Rd., Camden Rd., N.W.

LOCUM or Temporary Manager; Ph.C.; 29; experienced, West End and provincial; Photography.—Glycerin, Pharm. Journal Office, 8, Serle St., W.C.

UNQUALIFIED; 32; 15 years' experience; Photography; good references; disengaged; East Coast.—W. L. Ffrench, 7, West Stockwell St., Colchester.

Engagements Wanted—Continued

NOTTINGHAM.—As Manager, Senior or Locum; outdoors; qualified; 26; first-class London and provincial experience.—Chemist, 5, Albany Rd., Sherwood Rise.

MANAGER; qualified; sleep out; age 52; near London; six years' highest references; all-round experience; state salary.—Alpha, 6, Victoria St., Cwmbran, Monmouthshire.

LOCUM Tenens or Representative; 39; disengaged; 25 years' experience (all departments); Prescriber; Extractor; usual terms; references and photo.—M. P. S., Glanford House, Hainton Terrace, Grimsby.

EMERGENCY.—Locum Tenens; qualified; middle-aged; abstainer; Extractor; long or short periods; disengaged; usual terms, reasonable; references.—Telegraph, Brewerton, 133, Liverpool Rd., Birkdale, Southport.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Platinum Utensils and scraps for cash.—P. Rowsell, 9, Derwent Grove, Dulwich.

Herbarium and Materia Medica specimens, collection of, suitable Minor exam.—G. E. Ainslea, Scotstounhill.

Nest of Drawers, glass cases, dispensing screen; in good condition.—A. Mason, 6, Clytha Park Rd., Newport, Mon.

Fernie's "Herbal Simples," second edition.—Particulars and price to A. R., Pharm. Journal Office, 8, Serle St., W.C.

OFFERED.

45 Camwal Preference Shares, 19s. each.—Manna, 8, Serle St., W.C.

Pharmaceutical Journals, six volumes ('77 to '83) bound; offers.—Jelley, Chemist, Coventry.

Delicate chemical balance, Browning's spectroscope.—Hurst, 157, Tong St., Dudley Hill, Yorkshire.

Quain's Dictionary of Medicine, 1885; 2 vols.; half morocco; good condition. 10s.—Trional, 8, Serle St., W.C.

Eighty Loft's patent check-tills, with coin-exhibition, £3 10s., new; cash price 30s.—Chambers & Son, Dunstable.

What Offers?—2 doz. Dr. William's, Beecham's, Holloway's Pills; 1 doz. Doan's, 1/-.—Lithia, Pharm. Journal Office, 8, Serle St., W.C.

Cash Offers? B.P., '98, interleaved with late manufacturing chemist's private notes; Cooley's "Cyclopædia"; both good as new.—"Chemicus," 49, Friern Barnet Rd., N.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

Real Bargains. Sweeping Reductions. Mahogany-fronted Bottle Shelving, 3 Pilasters, 6ft. 6in. long, 5ft. 3in. high, for 25/-; another 5ft. length, 20/-; 19, 7lb.; 6, 5lb. White Shop Jars, Canopy Lids, unlabelled, never used, 1/- each, ridiculous price; few gilt labelled, 3d. extra; 23 more, second-hand, labelled, Japanned Lids, 6lb., 10d. each (cost 3/-); 5 Large Specie Jars, 7/6 each, useful for keeping Sponges clean, &c. (absurd prices); number handsome Mahogany Stands, for ditto, cheap; Quart Shop Rounds, labelled, 10d. each; Few Syrup Bottles; Giant Spectacles for outside show; 3 Iron Mortars; Large Copying Press, on stand with drawer, let down shelf at side, only 27/6; 2 gross 3d. Bond's Silicate Cement, 1/- dozen.—Griffin, Chemist, Kidderminster.

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows :—Fifty words, or less, 3s. 6d. ; each additional ten words, or less, 6d. ; two initials or two figures counting as one word.

FOR Disposal, first-class Dispensing and light Retail (South). Price £950, sine a/cs.—For particulars apply, M. Q., Pharm. Journal Office, 8, Serle St., London, W.C.

FOR SALE.—Old-established Chemist and Druggist Business ; convenient shop, stabling, large garden ; situated in a good market town in the West of England ; two lines of railways ; excellent district ; stock, fixtures, &c., by valuation. —Apply, E. W. Helps, Bank Chambers, Bridgwater.

UNOPPOSED profitable Retail in high-class suburb ; magnificent shop ; electric light, &c. ; solely under management ; about valuation of stock and fixtures will be taken ; splendid chance for a principal ; good house, garden, and stable ; all let off for amount of rent ; vendor retiring.—Lano, Pharm. Journal Office, 8, Serle St., W.C.

Business Wanted

WANTED, a good-class Retail Business in small country town (Midlands preferred) ; must have good house attached. Capital £1,000.—Address, Cortex, Messrs. Southall Bros. & Barclay, Birmingham.

Shop to Let

CHEMIST'S Splendid Opening.—Spacious Shop with plate-glass front ; main road, busy and rapidly increasing neighbourhood ; all adjoining shops let to old tenants ; large bank in same block ; excellent opportunity as branch business ; rent £100 ; direct from owner.—View, 2, Bank Building, West Kensington (close to station). Note.—Chemist's shop recently absorbed by bank for extension.

Shop Fittings for Sale

PLATE-GLASS Shelves, polished edges, 3 ft. long by 20 in., 16 in. and 12 in. standard bars and brackets, complete £3 10s. Chemist's Side Fittings, from £1 foot run. Counters from 7s. 6d. foot run. Counter Cases from 7s. foot run. Dispensing Screen, 6 ft. long, £6 10s. Cheapest house for blinds, mirrors, shelves, lamps, and window fittings.—**TREBLE & Co.**, Complete Shop Fitters, **RECTORY WORKS, RENDLESHAM ROAD, CLAPTON, LONDON, N.E.**

SHOP FITTINGS.—Special.—We are clearing our stock of Counters, Dispensing Screens, Bent and Flat Show-Cases, Wall Cases, Drug Drawers, Desks, Tooth Brush Cases, Sponge Cases, &c., &c., to make room for our new designs. We also have two second-hand complete fittings, with bottles and jars. Enquiries and inspection invited.—Ayrton & Saunders, 57, Parr St., Liverpool.

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PHARMACEUTICAL JOURNAL

Is supplied from the Office, 8, Serle St., London, W.C., post free to any part of the United Kingdom, Colonies, and Abroad, on prepayment of 20s. for twelve months.

Cheques (crossed London Joint Stock Bank), and Postal Orders should be made payable to G. STREET & CO., Ltd. ; and letters addressed to

THE PUBLISHERS,

8, Serle St., Lincoln's Inn, London, W.C.

CHEMISTS' TRANSFERS.

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56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., Chemists' Transfer Agents, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

The Business conducted by Messrs. Orridge & Co. has been known as a Transfer Agency in the advertising columns of the Pharmaceutical Journal since the year 1846, and is well known to all the leading firms in the Trade.

VENDORS have the advantage of Messrs. O. & Co.'s direct attention and advice as to value without any additional fees.

PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

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Chemists' Transfer Agents and Valuers,

9, NEW CANNON STREET, MANCHESTER.

VENDORS saved time and trouble by consulting before offering for sale. PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address,* "Tomtom."

Messrs. BERDOE & CO.

Expert Stock-takers & Valuers

Stock-taking is a necessity, and we undertake the work at the smallest possible cost, and guarantee not to upset the routine of business in the slightest degree. Terms on application. Businesses sold, valued and investigated. Note the address :—

35, JEWRY STREET, FENCHURCH ST., CITY.

OPENING A PHARMACY.

IF you are about to start in business, do not fail to apply to H. Poths & Co., 4, 5 and 6, Bury Court, St. Mary Axe, London, E.C., for one of their price lists giving full particulars of sets of shop bottles and jars and lists of labels, thus saving an immense amount of labour and time.

CHEMISTS WHO WISH

to make Up-to-date Improvements, Alterations, &c., would do well to consult

H. MILLS, Shopfitter, Shop Front Builder, &c.

Works: 63-165, OLD STREET, LONDON, E.C.

CHEAP HOUSE for Window Enclosures, Drug Fixtures, Wall Cases, Dispensing Screens, Glass Facias, Stall Plates, &c.

Chemists fitted complete. Estimates Free.

Death

MARTINDALE.—On the 2nd inst., suddenly, at 19, Devonshire St., Portland Place, W., William Martindale, F.C.S., F.L.S., Past President of the Pharmaceutical Society, aged 61. Friends will please accept this, the only intimation.

AUSTRALASIAN NEWS.

Pharmaceutical Society of Australasia.—The annual dinner of this Society was held on December 4, when the chair was taken by the President, Mr. E. T. Church, and there was a large gathering. In proposing the toast of the Pharmaceutical Society of Great Britain and Kindred Societies, Mr. H. W. Potts, F.C.S., said that he looked back with pleasure and gratitude to the early pioneers who wove the silver threads of good feeling which existed between the Victorian Society and the Mother Institution. Such men as Wm. Johnson, Joseph Bosisto, C. R. Blackett, and Henry Francis, had set themselves a standard when they arrived here, and they formulated a system which had all the advantages, and a great many more than, they themselves enjoyed. They had only to look to their College of Pharmacy to see the noble work which had been done. It would be their duty also to express through this toast their gratitude for the very kind manner in which several of their members had been received by the parent Society. One had only to spend a few hours with Mr. Tompsitt or Mr. Champion to realise how kind everyone had been to them during their recent visit to the old land, and how cordial a feeling existed between the two Societies. The editor of the *Pharmaceutical Journal*, in a recent article on "A Lesson from the Antipodes," showed how closely related the Societies were to each other. He (Mr. Potts) had something to do with bringing into prominence the Melbourne College of Pharmacy in connection with the Royal Commission on Technical Education, and it had been suggested in a certain quarter that had it not been for his own importunity the Commission might not have visited the College at all. But he thought the Commission had taken a just and true record of the work done, and its complimentary references to the College were, he felt, fully deserved. The old veterans of the Society were gradually disappearing. In the course of the past twenty years the Board and Council had changed considerably, but the permanent official had remained, and he had on this occasion once more to bear testimony to the zeal, capability, and tactfulness of their worthy Secretary and Registrar, Mr. Shillinglaw, who was responsible for so much of the success and prosperity they had achieved.

In Responding to the Toast, Mr. Sidney Plowman, F.R.C.S.Eng., said that he had only to look back to the magnificent research laboratories, the unrivalled museum, and the extensive library at Bloomsbury Square, to feel how much he owed to the parent Society. A reference had been made to the kindly way in which visitors from Victoria had been received at Bloomsbury Square, and he hoped this was a favourable omen, and that all pharmacists on the Register would be received with open arms in Great Britain. But before this could come there must be reciprocity at home between the various States, and that reciprocity could only be brought about by providing for one uniform and common examination conducted by a Federal Board of Examiners. When that was accomplished, reciprocity with Great Britain was within reasonable compass. His sympathies extended to the parent Society in having to compound with the enemy in regard to company trading, and he was sure they also sympathised with English pharmacists in connection with this matter. His personal feelings were of the deepest gratitude for the benefits conferred upon him, and he had the fullest respect, affection, and even veneration for the Society which had meant so much to him in his early career. The toast, needless to say, was honoured with the greatest enthusiasm, and both speeches were interrupted with frequent applause.

The Article Referred to by Mr. Potts—"A Lesson from the Antipodes" (see *Pharm. Journal*, October 26, 1901)—has been read with much delight by Victorian pharmacists, and the *Australasian Journal of Pharmacy* concludes an editorial note on the subject, referring more immediately to the possibility of some of the funds now expended on classes devoted to the teaching of dancing, etc., being rescued for pharmaceutical purposes, by saying: "Australian pharmacists will, we are confident, join us in wishing our British *confrères* God speed in any effort they may make in the direction indicated, and must generally feel highly gratified at the generous and kindly manner in which our contemporary has referred to our own leading educational establishments."

TRADE NOTES AND NOVELTIES.

Lemco Cookery Book.—The Liebeg's Extract of Meat Co., Limited, 9, Fenchurch Avenue, London, E.C., announces that a quarter of a million 'Lemco Cookery Books' are being distributed from house to house. It is a handy little book, containing 180 everyday recipes for soups, fish, entrees, poultry, and game, gravies, sauces, and sweets, with a few novel invalid dishes, and it also shows how economy and originality may go hand in hand in the kitchen. Those who do not receive a copy of the book before the end of February may obtain a copy free if they write their name and address on a Lemco wrapper and post to the above address.

Granular Hypo-Soda.—Mr. J. E. Lockyer, 87, Evelyn Street, Deptford, S.E., intimates that he is now sending out 1 lb. cartons of granular hypo-soda, in one gross lots, to customers upon receipt of postal order for 20s., that amount covering cost of packing in case, and free delivery anywhere in the United Kingdom. He also undertakes to print name and address of customer upon the cartons for 1s. extra. The quality of the hypo is all that can be desired.

Messrs. Thomas Christy and Co. intimate that they have been appointed sole agents in the United Kingdom for the preparations of Messrs. Schieffelin and Co., New York, and that they hold a full stock of their pills, granules, elixirs, etc.

A Scotch Catalogue of "Patent" Medicines, Etc.—Messrs. Raimes, Clark and Co., of Leith Walk, Edinburgh, send a copy of the January issue of their triennially-published catalogue of proprietary articles and "patent" medicines, which is, perhaps, the most comprehensive of its kind published in Scotland. The increased growth of the trade in "proprietaries" during the past decade is indicated by the fact that in 1890 this catalogue consisted of seventy-eight pages of "patent" medicines, and ten pages giving particulars concerning Messrs. Raimes, Clark and Co.'s own preparations; now it consists of 128 pages of "patents" and forty pages of information about special preparations and new remedies.

PUBLICATIONS RECEIVED.

The War Against Consumption. By Dennis Vinrace, M.R.C.S., L.S.A., Eng. Revised by John H. Vinrace, M.B., Lond.; M.R.C.P. Pp. 178. Price, 2s. 6d. net. London: Century Printing Company, Limited, 19 and 20, Fetter Lane, E.C. From the Publishers.

Early Work in Photography: A Text-book for Beginners. by W. Ethelbert Henry, C.E. With a chapter on Lenses. By H. Snowden Ward. Third Edition, Revised. Pp. 104. Price 1s. net, or post free 1s. 2d. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. From the Publishers.

The Photo-Miniature: A Monthly Magazine of Photographic Information. Vol. III., No. 32, November, 1901. Defects in Negatives. Pp. 343-390. Price 6d., post free 7½d. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. From the Publishers.

A Pretendida Salicylagem dos Vinhos Portuguezes. Por A. J. Ferreira da Silva. Pp. 27. Coimbra: Imprensa da Universidade. 1901. From the Author.

Relance de vista sobre a Questao dos Vinhos Portuguezes no Brazil em 1900-1901. Notas historicas e criticas. Por A. J. Ferreira da Silva. Pp. 116. Lisbon: Typ. A Vapor da Pap. Estevao Nunes and Fos., 58, Bua Aurea, 60, 1901. From the Author.

LONDON GAZETTE NOTICES.

PARTNERSHIP DISSOLVED.

George Stanley Perrett and Edwin Walter Routley, trading as Perrett and Routley, chemists, 25, Devonshire Road, Bexhill-on-Sea. Debts will be received and paid by G. S. Perrett, who will continue to carry on the business in future.

RECEIVING ORDER IN BANKRUPTCY.

Solomon George Watson, surgeon, 1, York Road, Hove, and 85f, Church Street, Brighton.

APPLICATIONS FOR TRADE MARKS.

*From the Trade Marks Journal, February 5, 1902.**

CLASS 3.

UCURINE.—242,442. A medicine for Rheumatism, for Human Use. Naumann and Co., 224, Rishton Lane, Bolton, Lancashire; Patent Medicine Vendors.—December 4, 1901. No claim is made to the exclusive use of the words "You cure."

EICERA.—242,582. An Ointment for Human Use. Fanny Isabella Armstrong, wife of E. A. Armstrong (Barrister), 12E, Oxford and Cambridge Mansions, London, N.W. (no occupation).—December 10, 1901.

IDERLY.—242,997. Chemical Substances Prepared for Use in Medicine and Pharmacy. Thomas Ridley, 9, English Street, Carlisle; Chemist.—January 1, 1902.

CLASS 39.

OTHELLO.—242,942. Marking Ink. Harold Heydon and Co., 118, Weston Street, Bermondsey, London, S.E.; Chemical Manufacturers.—December 28, 1901.

CLASS 42.

SERILA.—242,169. Beef Extract and Similar Articles of Food. Serila—Bouillon—Gesellschaft Mit Beschränkter Haftung, of Muhlenweg, 108, Hamburg, Germany; Manufacturers.—November 21, 1901. By consent. Address for service in the United Kingdom, care of Haseltine, Lake and Co., 45, Southampton Buildings, London.

CLASS 48.

FLORITZA.—241,374. Perfumery (including Toilet Articles, Preparations for the Hair and Perfumed Soap), but not including Preparations for the Teeth. Vinolia Company, Limited, Malden Crescent, London, N.W.; and Lea Bank Works, Carpenters Road, Stratford, Essex; Manufacturing Chemists, Perfumers, Soap and Candle Makers, and Glycerin Distillers.—October 19, 1901.

KYMOL.—242,085. A Toilet Preparation, being a Nursery Powder. S. F. Goss, Limited, 460, Oxford Street, London, W.; Chemists, etc. November 19, 1901

TRESSO.—242,624. Preparation for the Hair. The Tresso Company, Burlington Chambers, 14, North Street, Keighley, Yorkshire; Manufacturers of Preparations for the Hair.—December 12, 1901. No claim is made to the exclusive use of the word "Tress."

VIRELLE.—243,059. Perfumery (including Toilet Articles, Preparations for the Teeth and Hair, and Perfumed Soap). J. and E. Atkinson, Limited, 24, Old Bond Street, London; Perfumers.—January 3, 1902.

MISCELLANEOUS NEWS.

Readers are requested to send items of local news of general pharmaceutical interest. When newspapers are sent, the passages of interest should be marked.

THE REPORT OF THE POISONS COMMITTEE will very shortly be presented, observes the *Globe*, and will probably form a basis for legislation. The *Globe* hopes that when the Government comes to deal with the matter special attention will be given to the extraordinary regulation which makes it dangerous for a chemist to sell a customer a pennyworth of laudanum for toothache, while enough of the most deadly poisons to kill a regiment can be bought without question at the photographer's next door. The scheduling of poisons is also stated to be confessedly in a most unsatisfactory state.

KOKO FOR THE HAIR.—The Koko Mariscopos Company asked Mr. Justice Swinfen Eady, in the Chancery Division, on January 31, for an injunction to restrain Messrs. Cadman and Lunger from selling a toilet preparation called "Koko for the Hair" in this country, and from passing off such manufacture as that of the plaintiff company, pending the trial of an action. Mr. Justice Swinfen Eady, after Mr. Ritter, who appeared for the defendants, had stated that his clients claimed a right to manufacture and sell in this country, for export, granted an injunction until the trial, with liberty to apply to hear the case when the parties were ready, the costs to be costs in the action.

A NEW COINAGE.—At the Lincoln County Court, on January 20, Elijah Brackenbury, chemist and grocer, Bardney, brought an action against Chas. Sandy, of Bardney, for £5 19s. 2d., balance due on account of goods sold and delivered.—Mr. Williams, for the plaintiff, said that on May 12, 1900, the defendant owed the plaintiff £5 3s. 2d. for goods supplied and £1 3s. 6d. on account of a bicycle. On the 19th of the same month defendant gave plaintiff an I.O.U. for £6 6s. 8d. Of that sum he had paid only 7s. 6d.—The plaintiff gave evidence as to the amount due.—Defendant asserted that he had paid £3 of the account, and denied signing any note, and said he could neither read nor write. The plaintiff gave no receipt. The money was paid as washing money.—His Honour found that the defendant had proved his allegation that he had paid £3, and gave judgment for the balance, £2 19s. 2d., to be paid at the rate of 15s. a month.

THE PRESERVATION OF EGGS.—A correspondent of the *Manchester Guardian* explains that eggs for preservation should be gathered from the nests twice daily, say at 8 a.m. and 4 p.m. Without doing anything to them, except removing any dirt that may be on them, they should be placed small end downwards in a rack that will separate every egg from its neighbour by half an inch in space. A board with holes in it and legs to raise it so that the air can play freely round the eggs will do for a trial, but he uses racks made of galvanised iron wire; the places are a square $1\frac{5}{8}$ in. by $1\frac{5}{8}$ in., so that the egg only touches at four points, and these racks are stacked one on the other. Each rack holds 144 eggs, and is 23 in. long, 21 in. wide, and $3\frac{1}{2}$ in. deep. The eggs when placed in the racks should be kept in a cool, well-ventilated place, and never touched again till required for use. The surplus eggs of the prolific months are thus kept for use during the months when few are laid.

POISONOUS CHEESE.—A curious instance of wholesale poisoning by Dutch cheese is made the subject of some interesting observations by Dr. Collingridge, the Medical Officer of Health for the City. According to the *Times*, the cheese was in the first place sold by an importer to two large City firms and again resold by them to various retail shop-keepers, and the illness which followed the eating of some of the cheese has been traced to one common source. Cases of poisoning occurred in Bethnal Green, Bermondsey, Croydon, Deptford, Finsbury, and Tunbridge Wells, the symptoms in all cases being similar. They are those usually ascribed to the action of tyrotoxicon or tyrotoxin, a ptomaine which is sometimes found in poisonous cheese. The difficulty is that in the manufacture, as the cause is not known, it is impossible to take any steps to prevent the formation of this ptomaine, and, further, it imparts no taste or smell to the cheese; consequently its presence cannot be detected. None of the persons attacked died from the malady, though several were for a time seriously ill.

CLAIM BY A CHEMIST.—In the Dundee Sheriff Court, on January 3, an action was raised before Sheriff Lee by James Jack, pharmaceutical chemist, against Mrs. James Francis, Seaton Cottage, for payment of an account for spirits, etc. The pursuer alleged that Mrs. Francis had pledged her private estate for payment of any goods ordered by her. This was denied by defender, who pleaded that, as a married woman, she was not liable for goods ordered for the use of her household. Mrs. Francis admitted having got several of the items charged from pursuer, but she denied having ever stated to pursuer that she would hold her private estate as responsible for payment of the goods. Pursuer, on the other hand, said that Mrs. Francis had informed him that she would pay for the goods that had been ordered by her. None of the goods charged in the account had been ordered by her husband. The Sheriff held that this case was not on all fours with the former actions against the same defender. In these it had been clearly proved that Mrs. Francis had pledged her private estate, while in the present case that had not been proved. The Sheriff suggested to the defender's agent that some settlement should be made of all the claims, as it was not creditable that accounts should be incurred in the way they had been by defender.

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*Any objection to the registration of an application for the registration of a trade mark must be stated on Trade Mark Form J, obtainable at any money order office, price one shilling. Such objection must be lodged with the Comptroller within a month of the date given above.

SOCIETY AND ASSOCIATION NEWS.

Chemists' Managers' and Assistants' Society.—In connection with this Society a grand bohemian concert, in aid of the Benevolent Fund of the Pharmaceutical Society, will be held in the Council Chamber of the Holborn Restaurant, at 8 p.m. on Wednesday, February 12. Applications for tickets (1s. each) should be addressed to Mr. C. E. Pickering, 97, High Street, Manchester Square, W.

Institute of Chemistry.—The pass lists of the Institute of Chemistry for January, 1902, include the following names:—Intermediate Examination: G. J. Alderton, K. B. Benham, J. L. Garle, H. W. Hill, J. Johnston, A. W. Knapp, B.Sc (Birm.), S. G. Paine, W. B. Parker, J. B. Pursglove, J. C. Sheldon, H. A. Tempany, and R. Tyler. Final A.I.C. Examination: Branch "A" (Mineral Chemistry): A. G. Armstrong, W. W. Lumsden, A. B. Shepherd, B.Sc. (Vict.), and W. F. Sutherst, Ph.D. (Geneva). Branch "D" (Organic Chemistry): G. Clarke, jun., E. D. M. Neumann, B.A. (Oxon.), Ph.D. (Göttingen), H. A. D. Neville, B.Sc. (Lond.), G. M. Norman, A.R.C.Sc., B.Sc. (Lond.), W. H. Nuttall, W. H. Peters, and V. W. Theobalds. Branch "E" (Analysis of Food and Drugs, including an Examination in Therapeutics, Pharmacology and Microscopy): F. W. F. Arnaud, J. Evans, J. E. Jenkins, W. Partridge, S. O. Richmond, and E. C. Spurge.

SCHOOL AND COLLEGE NEWS.

London College of Chemistry, Pharmacy, and Botany.—The annual dinner of the London College of Chemistry and Pharmacy was held at the Venetian Chamber, Holborn Restaurant, on Wednesday, January 29. Mr. Percy M. Thornton, M.P., presided, and nearly 200 students and friends were present. After the toast of "The King" had been duly honoured, Mr. W. J. Fraser proposed "Success and Prosperity to the London College." Mr. H. Wootton, in his reply, after describing the work and progress of the College during the previous session, said it was a cause of much gratification that they had on the table the challenge cup of the Inter-Pharmacy Football League. Mr. H. Grayshon proposed "The Staff," to which Mr. C. E. F. Vallet responded. The toast of "The Students," proposed by Mr. W. B. Nelson, was coupled with the name of the College goal-keeper, Mr. E. W. H. James. The Chairman, in his address to the students, referred to the necessity of a good education for those to be engaged in dispensing physicians' prescriptions, and impressed upon the students the importance of perseverance and careful observation. He then presented the medals and certificates to the successful students, giving a word of kindly encouragement to each.

Medallists.

Sidney J. Banks	Silver Medal Materia Medica. Silver Medal Pharmacy. Bronze Medal Botany.
John A. Jenkins	Silver Medal Chemistry. Silver Medal Materia Medica.
Edward Corner	Silver Medal—Pharmacy. Bronze Medal Chemistry.
G. P. A. Hunt	Silver Medal—Chemistry. Bronze Medal—Materia Medica.
Bertha A. Kenway	Silver Medal—Botany.
Frank E. Rogers	Silver Medal—Botany.
Lincoln Ridehalgh	Bronze Medal—Materia Medica. Bronze Medal—Pharmacy.
William F. Clarke	Bronze Medal—Pharmacy.
Donald Colebrook	Bronze Medal—Chemistry.
Samuel H. Passmore	Bronze Medal—Botany.
Albert W. Ashkanazy	Bronze Medal—Materia Medica.

An excellent entertainment was given during the evening by Mr. Clifford Essex and his Troupe of Pierrots, the banjo duets and humorous songs being much appreciated. A very enjoyable and enthusiastic gathering was brought to a close by singing "Auld Lang Syne."

North of England School of Chemistry and Pharmacy.—The students held their annual supper and smoker on Wednesday, January 29, 1902, in the Grand Hotel, Newcastle-on-Tyne. There was a large attendance of old students, and the visitors included Mr. G. F. Merson, F.C.S., and Mr. Barry Noble. After an excellent supper, the following toasts were proposed: "His Majesty the King," by the Chairman, Mr. F. R. Dudderidge, F.C.S.; "The Pharmaceutical Society," by Mr. J. F. Wootton, and replied to by Mr. Merson; and the toast of the evening, "The North of England School of Chemistry and Pharmacy," by Mr. G. Rae Patterson, acknowledged by the Principal of the School, Mr. Dudderidge. Mr. Barry Noble spoke a few words, urging the claims of the Junior Chemists' Association, of which he is the President. The rest of the evening was devoted to a smoking concert, the following gentlemen contributing to the programme:—Messrs. J. Hay, G. R. Patterson, J. C. Patterson, Marshall, Stewardson, and McPhail, with songs; Messrs. Blackburn and J. A. Hay, with piano solos; Mr. Moffatt, a violin solo; Messrs. Robertson, Gowland, W. C. Longstaff and Parsons, with recitations; Messrs. Blackburn and J. A. Hay very ably performing the accompaniments.

Metropolitan College v. London College.—The return League match between the above clubs was decided at Wormholt Farm on Saturday last in a furious storm of wind, which quite upset any attempt at scientific football. London winning the toss, played with the wind in the first half, and scored through Evans, who took full advantage of a misunderstanding between the opposing backs, thus at half-time London led by one to nil, and they managed to keep their opponents out till the end of the game. It was a ding-dong struggle, with London slightly superior in the forward line, which fact just snatched the victory for them, and made some amends for their unexpected defeat earlier in the season. Conspicuous for the winners were J. A. Jones, Whitehouse, and Spouncer; while Smith and Burton did yeoman service for the Metros.

PERSONALITIES, BUSINESS CHANGES, ETC.

Notices of business changes, etc., should be sent by Divisional Secretaries or the persons interested, and will then be inserted free.

Mr. Henry Marshall, who has been for the last four years with Messrs. Davidson and Kay, 205, Union Street, Aberdeen, has taken over the business of Mr. James Clark, pharmaceutical chemist, at 389, Union Street.

Messrs. Voigtlander and Sohn, 92, Hatton Garden, London, E.C., intimate that they have appointed Mr. F. G. Phillips, of the firm of W. Stanbury, 12, Charterhouse Street, Holborn Circus, wholesale optician, as sole trade agent for the sale of their prismatic field and opera glasses, telescopes, magnifying lenses, etc.

Mr. E. C. Spurge, M.P.S., pharmaceutical chemist, who was successful at the recent Intermediate Examination of the Institute of Chemistry, is an old student of the School of Pharmacy. In 1896 he was awarded the Pharmaceutical Society's silver medal, the silver medal for pharmacy, and a first certificate of honour for botany.

Mr. D. H. Oxen intimates that the firm of Oxen and Co., Ltd., chemists and druggists, etc., carrying on business at Newcastle, Hanley, and Stoke, Staffordshire, is about to be wound up voluntarily, and that in future he proposes to carry on business as usual in his own name. We understand that for some years past Mr. Oxen has held nearly all the shares in the company.

Lieut. John Gibson, F.C.S., M.P.S., of Hexham, has consented to deliver the lecture on "Life in a Volunteer Camp," which he recently gave at Hexham and Prudhoe, at several other towns in the district, including Haydon Bridge, Acomb, Newbrough, and Bellingham. The main object of the lectures is to help recruiting, and the proceeds will be devoted to local charitable objects.

Mr. John Evans, M.P.S., pharmaceutical chemist, whose name appears amongst the list of successful candidates at the recent Intermediate Examination of the Institute of Chemistry, was a Bell Scholar at the School of Pharmacy in 1897, and in 1898 he took first certificates of honour in practical chemistry and botany. While at the "Square" Mr. Evans was extremely popular as captain of the football team, and he was the first Hon. Secretary of the Inter-Pharmacy Football League. He was also at one time Hon. Secretary of the Chemists' Assistants' Association, and much regret was felt amongst his numerous friends in London when he took his departure for Sheffield, where he is now working in the laboratory of Mr. A. H. Allen, the City Analyst.

MARKET REPORT.

London. Thursday, February 6, 1902.

Business in Drugs and Chemicals has again been extremely quiet during past week, and while there are no changes in value of any importance to record, prices have in many cases a further downward tendency. Quinine, after being very flat towards end of last week, has become firmer again in face of the comparatively moderate shipments of Cinchona Bark advised from Java for month of January. Bromides continue very firm. Iodides unchanged. Mercurials are steady, as also is Camphor. Acid Citric, Acid Tartaric, and Cream of Tartar quiet. Quicksilver and Mercurials unchanged. Cod Liver Oil steady pending more reliable reports as to the result of the fishing. Cocaine quiet at late decline. Acetanilide, Phenacetin, and Sulphonal quiet and weak. Glycerin firm for the crude article, with the probability of an advance in refined Glycerin in the not too distant future. Opium quiet and unchanged. Morphine very quiet. Codeine firm and in fair demand. Bank rate remains unchanged at 3½ per cent.

ACID CARBOLIC—Is steady and in good demand at unchanged prices.

ACID CITRIC.—Steady at 1s. 0¾d. to 1s. 1d. per lb., according to make and quantity, for crystals in 5-cwt. casks.

COCAINE.—There is nothing obtainable below maker's price of 17s. 9d. to 18s. 3d. per oz., according to quantity, for the Hydrochlorate, in 25 oz. tins.

CINCHONA BARK.—The total shipments of Bark from Java for month of January were 975,000 Amsterdam lbs., as against 1,000,000 Amsterdam lbs. last year and 602,000 Amsterdam lbs. in 1900. The above total does not appear so very excessive when looked at in comparison with total Bark shipments from Java for latter months of last year, and if only moderate shipments continue for a month or two we shall nearly certainly see an advance in value of quinine.

QUININE.—Market is quiet, but fairly steady, makers of the favourite B&S and Brunswick brands still quoting 1s. 2d. per oz. for the Sulphate for 1,000 oz. lots in 100 oz. tins, while in the speculative market the price is quiet at 1s. 1¼d. per oz. for above-named brands, for prompt delivery. Should the Bark shipments from Java only prove moderate for next and following months the price of Quinine would appear almost certain to advance.

THURSDAY'S DRUG SALES.

To-day's public sales of Drugs comprised sixteen catalogues, containing in many instances a large number of lots. The sale passed off very quietly, very many lots failing to sell, while there is nothing of any particular importance to record. We give particulars below.

ALOES.—1 case good Cape sold at 36s. 6d. per cwt. Other 4 cases were bought in. Of 61 boxes Curaçoa 16 boxes sold at 18s. 6d. to 22s. per cwt., subject to holder's approval; balance taken out nominally at 35s. 15 kegs Socotrine also did not sell.

AMBERGRIS.—2 tins of good quality were bought in at 105s. and 120s. per oz. respectively.

ANNATTO SEEDS.—30 bags were bought in at 2½d. per lb.

ANTIMONY.—27 cases crude Japan were taken out at £16 10s. to £17 per ton.

BALSAM COPAIBA.—1 case of inferior quality sold at 1s. per lb.

BALSAM TOLU.—2 cases only fetched 11d. per lb.

BUCHU LEAVES.—6 packages good longs part sold at 1s. 1d. to 1s. 2d. per lb. 18 packages yellow rounds failed to sell.

CALABAR BEANS.—10 packages failed to find a buyer, and were bought in at 1s. 11d. per lb.

CARDAMOMS.—7 cases, part sold at 2s. 2d. per lb., subject to owner's approval, for fine native Wild Ceylon, 8 cases fair to good seeds realising 1s. 7d. to 1s. 9d. per lb. Other 95 cases, part sold at 2s. 4d. for fair Ceylon Mysores downwards. Other 61 cases part sold at 2s. 1d. downwards, other 33 cases at 2s. 2d. downwards. Other 52 cases at 2s. 2d. per lb. for fairly bold long Mysores downwards. Other 22 cases sold at 1s. 4d. to 1s. 9d. per lb. 17 cases Seed were taken out at 1s. 11d. per lb. 3 cases brown Ceylon Malabars sold at 1s. 2d. per lb. Other 3 cases not so good at 11d. per lb.

CASCARILLA BARK.—24 bales were chiefly bought in, 2 bales fair but stringy selling at 45s. per cwt. 4 barrels siftings also failed to sell.

COLOCYNTH.—1 cask broken sold at 1s. 1d. per lb.

CONDURANGO BARK.—7 bales fair bark, but slightly woody, were bought in at 5d. per lb.

CUBEBS.—3 bags fair bold sold at 30s. per cwt.

CUMMIN SEEDS.—40 bags fair Malta were taken out at 40s. per cwt.

CUTTLE FISH BONE.—23 packages sold without reserve at ¾d. per lb.

DOLCHICOS DOWN.—4 tins of fair quality with seeds sold at 1d. per oz.

DRAGON'S BLOOD.—Of 4 cases only 2 sold at £11 per cwt.

GUM ARABIC.—4 cases sold without reserve at 80s. to 83s. per cwt. 2 cases fair grain fetched 100s. per cwt.

GUM ASAFETIDA.—179 cases very common stuff offered without reserve all sold at 6s. 6d. to 15s. per cwt.

GAMBOGE.—7 cases fair bright pipe were bought in nominally at £16 per cwt.

GUM BENZOIN.—35 cases Palembang were all bought in. Other 19 cases ditto part sold at 30s. per cwt., subject to owner's approval. Of other 10 cases 5 sold at same figure. 16 cases Sumatra sold at £7 to £7 2s. 6d. per cwt. for medium seconds. Other 91 cases Sumatra part sold at £7 15s. for fair seconds down to £6 per cwt. for less desirable quality. Of 8 cases Siam only 1 case sold at 67s. 6d. per cwt., quality being according. Of other 10 cases 1 case fair loose gum sold at £22 15s. per cwt.

GUM KINO.—12 cases good Cochin were bought in.

GUM MYRRH.—7 cases medium to fair sorts sold at 58s. to 61s. per cwt. Of other 10 bales 2 bales sold at 70s. per cwt. for good pale sorts.

HONEY.—Of 115 packages Jamaica tins and cases sold at 16s. 6d. to 20s., according to quality. Of other 43 packages only 5 barrels sold at 18s. per cwt.

IPECACUANHA.—43 bales Rio were practically all bought in at 10s. 6d. to 10s. 9d. per lb., 1 bale only selling at 10s. 4d. Of other 10 bales and 3 casks ditto 1 bale sold at 10s. 2d. and 1 cask at 8s. 2d. per lb. Of other 8 bales 2 bales sold at 10s. 1d., and 1 bale, subject to owner's approval, at 10s. per lb. 4 bales Carthagena were taken out at 5s. per lb. Of other 13 packages ditto 2 barrels sold at 4s. 6d. per lb. Other 10 bales were taken out at 4s. 10d. per lb.

ORANGE PEEL.—Of 35 packages bright only a few cases sold at 8d., subject to owner's approval; balance was taken out nominally at 1s

ORRIS ROOT.—11 bags were bought in at 32s. per cwt., 3 bales powder selling without reserve at 23s. per cwt.

RHUBARB.—30 cases part sold at 9d. per lb. for fine flat high dried of medium size. 17 cases rough wormy round ditto were taken out at 6d. per lb. Other 27 cases part sold at 8½d. per lb. for good small flat Canton, and at 8d. per lb. for very small. 16 chests common rough round wormy high dried, offered without reserve, chiefly sold at 3d. per lb., 4 chests fetching only 2¾d. per lb. Other 50 cases high dried were nearly all bought in, only 14 cases selling without reserve at 8¾d. for fine rough rather wormy down to 4¾d. to 6d. per lb. for rough coated high dried.

SARSAPARILLA.—54 bales Jamaica part sold at 1s. 4d. per lb., one lot only realising 1s. 3d. per lb. Of other 18 bales ditto 1 bale sold at 1s. 4d. per lb., 3 bales at 10d., and 1 bale country damaged at 8d. per lb.

SENNA.—104 bales Tinnivelly, chiefly consisting of very common, partly, in fact, mere rubbish, sold at 2d. per lb. downwards. Other 79 bales ditto part sold at 1¼d. per lb. downwards and at 1¾d. per lb. for pods. Other 203 bales leaf sold at about same parity, 4 bales good leaf fetching 6d. to 6½d. per lb. and 1 bale 3¾d. per lb. 65 bales Alexandrian were nearly all bought in, only a few bales of broken leaf selling at 2¾d. per lb. Fine pods were taken out at 7d. per lb.

SQUILLS.—Of 50 bags only a few damages sold at ¾d. to 1d. per lb.

TAMARINDS.—68 casks black East Indian were bought in at 10s. per cwt.

TURMERIC POWDER.—20 cases sold at 13s. per cwt.

VANILLOES.—6 tins mouldy Tahiti, offered without reserve, only fetched 2d. to 2¼d. per lb.

WAX.—50 blocks fair Zanzibar part sold at £6 12s. 6d. per cwt. Other 24 packages chiefly sold at same figure. 91 mats Madagascar sold at £6 5s. to £6 15s. per cwt. Of 2 cases East Indian 1 case realised £6 2s. 6d. per cwt. 1 case Jamaica sold at £8 per cwt. Other 9 packages ditto realised £8 to £8 2s. 6d. per cwt.

DIARY OF THE WEEK.

Monday, February 10.

Dewsbury and District Chemists' Association, Church House, Church Street, at 8.30 p.m.—Lantern Lecture on "Bacteria and Their Allies." By F. P. Sargeant.

Tuesday, February 11.

Bradford and District Chemists' Association.—Lantern Lecture, "By-ways in Cumbria," by Percy Lund.

Royal Institution, Albemarle Street, Picadilly, W., at 3 p.m.—"The Cell: Its Means of Offence and Defence. Immunity (Lecture V.)." By Dr. Allan Macfadyen.

Wednesday, February 12.

Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, London, at 11 a.m.—Meeting of the Council.

Chemists' Managers' and Assistants' Society, Holborn Restaurant, London.—Smoking Concert on behalf of the Benevolent Fund of the Pharmaceutical Society.

Manchester Pharmaceutical Association, Victoria Hotel, at 7.30 p.m.—Lecture on "Jamaica," with Limelight Illustrations, by T. H. Wardleworth.

Newcastle-on-Tyne Chemists' Association.—Smoking Concert.

Thursday, February 13.

Chemists' Assistants' Association, 73, Newman Street, London, W., at 8.30 p.m.—"Some Notes on Medicinal Plants Cultivated in Great Britain," by F. Ransom.

North-East Lancashire Chemists' Association, White Bull Hotel, Blackburn, at 8.30 p.m.—Lantern Lecture on "Switzerland," by Joseph Hindle: also music, and light refreshments will be provided.

Friday, February 14.

Glasgow and West of Scotland Pharmaceutical Association.—"The Preparation of Antitoxic Serum" (illustrated by limelight views), by T. Maben.

Saturday, February 15.

Inter-Pharmacy Football League.—London v. Muter's College.

Royal Institution, Albemarle Street, Piccadilly, W., at 3 p.m.—Lord Rayleigh on "Some Electrical Developments."

COMPANY INTELLIGENCE.

Bovril Dividend.—The directors of Bovril, Limited, have resolved to recommend, subject to final audit, the following dividends:—On preference and ordinary shares at the rate of 5½ per cent. and 7 per cent. per annum respectively for second half-year and 4 per cent. in deferred for year 1901, to add £25,000 to reserve and carry forward £14,354.

Sanitas Electrical Company, Limited.—This company was registered on January 28 with a capital of £4,000, in £1 shares, to acquire the business carried on by R. and K. Otto, at 22a, Luisen Strasse, Berlin, together with certain inventions in relation to improvements in or relating to apparatus for curing diseases by means of light, electrical and light baths, and the general business of a medical institute for the treatment of patients by such means. There is no initial public issue.

Bichloride of Gold Hydro Establishment (Southport), Limited.—Registered on January 24, with a capital of £4,000, in £1 shares, to adopt an agreement with Robert Henshall and others for the acquisition of the business of the Bichloride of Gold Hydro, Southport, as now carried on by them at The Ranche, Birkdale, and to undertake the cure of alcoholism, narcotism, neurasthenia, and other kindred diseases; and as hydropathic and lodging-house keepers generally. No initial public issue. The directors are to be elected by the subscribers. Qualification, £50. Remuneration to be fixed by the company. Registered office, 44, Chapel Street, Southport.

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I remain,
(Signed) Yours faithfully,
HENRY BROWNE, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A. Lond.
The British Antitoxine Manufacturing Co.,
31, Snow Hill, London.

Notices to Correspondents.

All Communications for the 'Pharmaceutical Journal' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street, Lincoln's Inn, London.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Atkins, Barker, Boorne, Brown, Cullwick, Cruickshank, Dow, Drayton, Dunlop, Ekins, Francis, Geddes, Gibson, Gilmour, Goldby, Grier, Hadwen, Hallaway, Hill, Hirsch, Kieft, Lord, Lyon, Morris, Nash, Nelson, O'Halloran, Picken, Pickering, Pickworth, Reid, Roe, Sadler, Sargeant, Saunders, Vance, Voigtländer, Wallace, Wootton.

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WILLIAM MARTINDALE.

Pharmacy has sustained a severe blow by the sudden death of Mr. William Martindale, the immediate past-President of the Pharmaceutical Society who so recently as Saturday last was still labouring for the benefit of the craft, in connection with which he had acquired a position of eminence and a cosmopolitan repute. The exceptionally painful circumstances of his death, stated elsewhere, enhance the regret that would, in any case, have been felt for the loss of such a distinguished representative of British pharmacy. His commanding presence and attractive personality were familiar to pharmacists in many parts of the world, while to those who have never enjoyed the privilege of personal intercourse with this typical pharmacist, he was almost as well known by the practical outcome of his life-work. Though cut off in the very prime of his life, he had yet secured for himself in pharmacy a reputation which is second to none, and the results of his labours cannot fail to persist for many long years to come.

Born near Carlisle in 1840, Mr. Martindale received his early education at a private school in that northern city, and was subsequently apprenticed to a pharmacist carrying on business in the same place. He belonged to a family of Cumberland yeomen, but possessed only indifferent health when he arrived in London, at the age of twenty-two. After going through a course of study at the School of Pharmacy, Bloomsbury Square, and qualifying as a pharmaceutical chemist, he became an assistant to Messrs. Morson and Son, Southampton Row, and remained with that firm for some years. Later, he became dispenser and teacher of pharmacy at University College Hospital, and demonstrator of materia medica at University College, but it was not until 1873 that he entered upon the most important stage in his career. He then became proprietor of the business in New Cavendish Street, with which his name has since been associated, and the remaining years of his life have presented an unbroken record of labour and worry. Success crowned his efforts, but it can hardly be said that he enjoyed his success to any considerable extent, and the pity of it is that the end has come before he could fully enter into the reward of his labours.

The pharmacy in New Cavendish Street has attained a fame which might not otherwise have attached to it, by reason of the publication of the well-known and marvellously successful book which Mr. Martindale produced in conjunction with Dr. Wynn Westcott. The idea of the 'Extra Pharmacopœia' was suggested to Mr. Martindale at a time when he was frequently engaged in assisting with the "Dispensing Memoranda," which constituted a very popular feature in the Journal as late as the year 1882. His object was to produce a work suited to modern requirements, somewhat on the lines of Gray's 'Supplement,' a work which has long been out of print, but is even yet of great practical value. The notes which formed the nucleus of the first edition of the 'Extra Pharmacopœia' had taken many years to accumulate, and were largely based on the "Dispensing Memoranda," while the plan of the book was suggested more or less completely in the course of long conversations in the editorial sanctum of the official organ, after that particular feature of the Journal had ceased to exist. The first edition of the book appeared in 1883 and, during the past nineteen years, the work has passed through no less than ten editions, increasing in bulk and utility with each successive edition, until physicians and pharmacists alike have wondered however they managed to get along without the work before it came into existence.

Meanwhile, Mr. Martindale has been serving pharmacy in many other, less lucrative but no less generally useful, ways. For ten years (1873-1882) he was a member of the Pharmaceutical Society's Board of Examiners for England and Wales. In 1889 he became a member of the Society's Council, in 1898 he was elected Treasurer of the Society, and the following year he became President. Ill-health, unfortunately, dogged his footsteps while acting in the last-mentioned capacity, and during the last few years he has been driven to seek rest and change in the West Indies, South Africa, and elsewhere. But absolute rest was unknown to him. His ceaseless activity led him to accept the position of President of the British Pharmaceutical Conference on two separate occasions; he was also a member of the Council of the Royal Botanic Society, and interested himself with characteristic zeal in a scheme for the improvement of botanical teaching in London. In addition, Mr. Martindale was a Fellow of the Chemical Society and of the Linnean Society, also a member of the Sanitary Institute, the Society of Arts, and the Sussex Archæological Society. Finally, he was a "Baron" of the Cinque Ports, in virtue of having occupied the unique position of Mayor of Winchelsea, and Government recognition of his position as a prominent pharmacist was recently indicated by his appointment as a member of the Privy Council's Poisons Committee. Of the man and his work, it must suffice to say that he was conscientious and painstaking to a degree, spending as much time over the elucidation of some apparently insignificant point as many workers devote to an elaborate research. Hasty and impatient at times, he was ever good-hearted and prompt to make amends for seeming injustice. Though not a born leader of men, his death leaves in the ranks of pharmacy a gap which it is not too much to say will never be filled, and the profession generally is distinctly a loser by the passing of the distinguished individual known throughout the civilised world simply as

William Martindale—Pharmacist.

ANNOTATIONS.

The Council and Committee Meetings, which should have been held at the headquarters of the Pharmaceutical Society on Tuesday and Wednesday, have been postponed for a week, owing to the funeral of the late Mr. Martindale taking place on Wednesday, February 5, the usual Council day. The various Committees will therefore be convened for Tuesday next, February 11, and the Council for the following day, an arrangement which necessitates the abandonment of this month's evening meeting, for which Tuesday evening, February 11, had been reserved. In pursuance of the provisions contained in Bye-law 2 of Section XVI., it will be the duty of the Council at its next meeting to appoint a member of the Society to fill the vacancy unhappily occasioned by Mr. Martindale's decease. The last exercise of this power of co-optation was in December, 1898, when Mr. Harrington was appointed to take the place of Mr. R. Hampson, who had resigned owing to ill-health.

Mr. Martindale's Funeral, as already stated, took place on Wednesday, the place of interment being St. Marylebone Cemetery, East Finchley. The Pharmaceutical Society was represented at the graveside by the President (Mr. Newsholme), the Vice-President (Mr. Allen), and the Registrar (Mr. Bremridge). Other members of the Council present were Messrs. Carteighe, Cooper, Cross, Glyn-Jones, Harrington, Hills, Savory, and Wootton. The Western Chemists' Association was represented by its President, Mr. W. F. Gulliver, and among the relatives and friends of the deceased pharmacist present were his sons, Dr. W. H. Martindale and Mr. L. Martindale; also Messrs. E. R. Marsh, W. J. I. Philp, R. A. Robinson, G. S. Taylor, R. Taubman, S. J. Weston, Harold Wilson, E. N. Butt, W. Warren, and others. A wreath from the Pharmaceutical Society bore the words: "From the President and Council of the P. S. G. B., in affectionate and grateful remembrance of their old friend and colleague."

The Case for Free-Trade in Poisons should receive a severe blow as the result of the inquest briefly dealt with at page 106, and more fully reported in the *Staffordshire Sentinel* for January 30. A firm which manufactures a nicotine insecticide for horticultural purposes appear to have sent it out to seedsmen and florists without any indication of its poisonous nature; consequently the retailers, knowing nothing whatever about the dangerous properties of the liquid, have supplied it to a customer in an old brandy bottle without a proper label. As a result, a gardener has mistaken the insecticide for some beer, which it closely resembled in appearance, and died shortly afterwards. Had the sale of the poison been effected by a person duly qualified under the Pharmacy Act, such a fatality could not have occurred unless the user had displayed the grossest negligence, nor is there the least doubt that the qualification of the seller of poisons is the best safeguard for the public. Nevertheless, the Society established for the protection of traders who wish to infringe the Pharmacy Act with impunity proceeds on its dangerous way and endeavours to attract sympathy for its mischievous proceedings by means which could only be regarded as fair in war, if then. Witness the article reprinted in last week's Journal, which has apparently emanated from the headquarters of the Society referred to, as well as the numerous inaccurate and misleading paragraphs which are continually appearing in the lay press. Further, the Secretary of that Society has secured prominence for a fine example of specious writing, in the form of a long letter on the sale of poisons for industrial purposes, which has appeared in the organs of the photographic and grocery trades. The arguments he adduces have been fully refuted quite recently by Mr. Algernon Warren, in the article reproduced from the *Western Daily Press* a fortnight ago (see *ante*, p. 62). It only remains to point out, therefore, that, while the Pharmacy Acts may be imperfect, and some little trouble may at times be caused to persons desiring to make use of poisons for technical or trade purposes, the insecticide case referred to goes to prove that any relaxation in the present restrictions on the sale of poisons cannot fail to prove disastrous to the public safety.

The Sale of Scheduled Poisons was the subject of several questions asked in the House of Commons by the member for Lanark, on Monday, February 3. In the first place, Mr. Caldwell asked the Secretary of State for the Home Department whether he was aware that, under the law relating to the sale of scheduled poisons, an unqualified assistant of a medical man or of a registered chemist is prohibited from selling poisons, under penalty of a fine, but that no penalty is attached to the employer for any offence committed by such unqualified assistant; further, Mr. Caldwell inquired whether the Home Secretary was aware that, in the case of registered medical practitioners, the General Council of Medical Education and Registration of the United Kingdom has given notice that it will treat as infamous conduct in a professional respect, and have the name erased from the Medical Register, under Section 29 of the Medical Act, 1868, of any medical practitioner who may leave an unqualified assistant in charge of a medical hall or open shop, whilst no penalty is attached to the registered chemist who employs an unqualified assistant should that assistant sell scheduled poisons. Finally, Mr. Caldwell asked whether it is within the power of the General Medical Council to declare the employment of an unqualified assistant to be infamous conduct in a professional respect under the Medical Acts; and, if so, whether the Home Secretary would introduce legislation which will equally punish a registered chemist who may similarly employ an unqualified assistant, seeing that the danger to the public is equally the same whether the unqualified assistant be that of a medical practitioner or of a registered chemist?

The Replies to the Questions were given by Mr. Jesse Collings, in the absence of his chief. He stated that Mr. Ritchie understands that under the Pharmacy Acts, 1868 and 1869, any person who sells poison, not being a chemist or a qualified medical practitioner, is liable to prosecution, but that there is no provision in those Acts for making the employer responsible for the acts of his apprentice or assistant except in the case of a breach of the regulations to be observed in the sale of poisons. The powers of the General Medical Council, as to deciding what is or what is not "infamous conduct in a professional respect" under the Medical Act, are governed by the terms of the Act and the decisions thereunder, and the Secretary of State for the Home Department has no authority to interpret them. The subject of the sale of poisons is now being considered by a Committee, whose recommendations must be awaited before any decision as to the legislation suggested can be arrived at.

The Disciplinary Measures adopted by the General Medical Council—in dealing with cases in which registered medical practitioners keeping open shop have permitted unqualified assistants to break the law by selling scheduled poisons—naturally fail to commend themselves to individuals whose unprofessional practices have been attacked, and anonymous letters on the subject continue to worry editors. One of the latest contributions to the discussion in the *Lancet* is a letter signed "M. D.," the writer of which points out that the Pharmacy Act of 1869 placed chemists and registered medical practitioners on the same footing as regards keeping open shop and the sale of scheduled poisons, and they have remained so until the recent decision of the General Medical Council. Both have been in the habit of keeping unqualified assistants and apprentices, and the unqualified assistant of either a chemist or a medical man may be fined for breaking the law by selling a scheduled poison. But, he adds, while in the case of a chemist the punishment stops short with the assistant, should the doctor's unqualified assistant break the law, then the doctor may also be punished by having his means of livelihood taken from him. Surely, he says, "a crime which merits so severe a punishment in the one case is deserving of some punishment in the other?" In reply to this, the editor of the *Lancet* states that it was clearly the opinion of the General Medical Council that the medical practitioner should not employ others to break the law and then escape all responsibility in the event of their detection. That answer, of course, will not satisfy "M. D." that the chemist who permits an unqualified assistant to break the law should not be struck off the Register, but as it happens there is no power vested in the Pharmaceutical Society or any other body to inflict that punishment for such an offence.

BERLIN PHARMACISTS are in conflict with the united sick clubs of the city, the immediate cause of the dispute being that the clubs require a discount of 10 per cent. to be granted to them, though the real causes, according to the Berlin correspondent of the *Lancet*, are more deeply seated and depend on the somewhat obsolete laws relative to the pharmaceutical profession. Owing to the strong organisation of the pharmacists, it was generally believed that a proposed boycott of the majority of pharmacies would be a failure. But, as it happens, the organisation of the clubs and the *esprit de corps* of the working population to which the club members exclusively belong have been strong enough to maintain the boycott and even to extend it. It is also stated by the *Lancet* correspondent that the pharmacists some months ago discontinued the granting of credit to club members, so that the latter had to pay for their medicines at once, and as the majority were not always provided with sufficient ready money the pharmacists hoped thus to coerce the clubs. But the proprietors of the unlicensed drug-stores came to the assistance of the club members, compound medicines—the sale of which is by law exclusively reserved to the licensed pharmacies—being either purchased from the pharmacists by the proprietors of the unlicensed drug-stores and the price afterwards recovered from the clubs, or money was advanced to the members, who were thus enabled to buy what they wanted from the licensed pharmacies. The pharmacists are now stated to be willing to allow a discount, but they require that the club members shall cease to purchase from the unlicensed druggists—a stipulation which has caused negotiations to fail, because the clubs decline to forsake the unlicensed druggists, who have been their most useful allies in the campaign. At present, therefore, there is but little hope of a voluntary agreement being arrived at, and it remains to be seen whether the Government, which has the control of pharmacies as well as of sick clubs, will interfere.

CARDIFF PHARMACISTS are making an effort to secure the establishment of a pharmacy class at Cardiff University College, and Principal Griffiths (see *ante*, p. 79) is reported to have expressed his willingness to start a class in October next, provided that twenty students are guaranteed. According to the *Western Mail*, the fees from that number of students will amount to £250 a year, and, over an area like that of South Wales and Monmouthshire, there should be no difficulty in getting double or treble that number of students. Those estimates appear to be far wide of the mark, and it is to be feared that Principal Griffiths is doomed to disappointment if he places any reliance upon them. Neither should Cardiff students place much dependence upon the *Western Mail's* description of the Minor Examination as a very "tricky" one. Any semblance to trickiness in the examination is only apparent to tricky or stupid people.

POISON PEDLARS are told in a recent issue of the *Globe* that they must cease to traffic in poisonous drugs of a more or less deadly character, if they wish to be left alone. According to a correspondent of the *Yorkshire Daily Post*, chemists are sometimes unjustly blamed for the acts of a class of men who make a practice of supplying poisonous drugs to farm lads who have the care of horses, and the *Globe* now takes up the subject, pointing out that the lads, having discovered that the administration of certain drugs, notably arsenic, improves the appearance of the animals in their care, buy these "coat improvers" with their own money and administer them without the knowledge of their employers. If application were made to some chemist, secrecy could not be relied on, whereas the pedlar knows when to be silent. The result is said to be that in rural Yorkshire, and probably in other counties, the poison pedlar carries on the illicit business, and makes considerable profits out of his youthful customers. As they have only the vaguest notions as to the quantities which may be safely used to produce the desired effect, and as the vendor is not much better informed, farmers are frequently puzzled to account for symptoms of poisoning among their horses, and attribute the outbreak to some cause wholly different from the real one. The correspondent of the *Yorkshire Daily Post*, already mentioned, states that the lads have no evil intention, but each is anxious to have the best looking team when a visit has to be made to the nearest market town. He adds that, as farm hands are better educated now than they were a few years ago, it would be well if agricultural clubs were to have lectures on the management of agricultural horses delivered at suitable centres during the winter months, by some experienced veterinary surgeon, and thus by means of sound teaching remove destructive ignorance.

THE PREPARATION OF COMPRESSED TABLETS appears likely to become a subject of practical interest to more and more pharmacists as time wears on, and Mr. Forret's response (see p. 108) to "An Ordinary Pharmacist's" request furnishes a useful addition to the existing stock of knowledge on the subject. The tablets sent by Mr. Forret contain mercury with chalk, pepsin, salol, and thyroid respectively. They are all as well finished as could be desired, equal to any factory-made articles in appearance and probably much superior in other ways, in addition to which Mr. Forret possesses the great advantage of knowing exactly what they contain. It would be interesting if Mr. Forret would now confer a further benefit on the craft, by recording his experiences in tablet-making and communicating such details as are likely to prove helpful to other pharmacists. Further information about tablet machines and experience gained in using them will also be helpful, and manufacturers or users of such machines are invited to send suitable information for publication in the Journal.

VISITORS TO THE SOCIETY'S MUSEUM at Bloomsbury Square, London, can see this week a fresh specimen of the curious abnormal growth of the orange called Buddha's claw, or more politely "Buddha's fingers," which has been kindly forwarded by Sir Thos. Hanbury, K.C.V.O., from his celebrated Italian garden. From the same well-known botanist and horticulturist specimens have been received, and in a fresh condition, of *Pilocarpus pennatifolius*, in flower and fruit; *Eucalyptus globulus*, in flower; *Acacia neriifolia* and *A. longifolia*, illustrating the phyllody of leaves and the regular flowers of Mimoseæ; also fine specimens of *Aloe socotrina* and *A. frutescens*, in flower.

THE SUPPRESSION OF THE OPIUM TRADE would cause a distinct injury to medicine and pharmacy, and the Society which exists for the purpose of suppressing that trade has simply made itself ridiculous by presenting a memorial to Lord Salisbury, in which objection is taken to the fact that, during recent years, the Indian Government has largely extended the cultivation of the poppy in India. The consumption of opium for medicinal purposes is likely to be greater, rather than less, as years roll on, and there is no reason why the supply of the drug for European consumption should not come from India instead of Asia Minor and elsewhere, if the Indian opium were suitably prepared. But, ignoring that fact, the absurd memorialists pray for the observation of the principle of not increasing, but steadily diminishing, the culture of the poppy in India. The figures for the year 1898 show an increased area of 63,311 acres under poppy, as compared with those of the previous year, and of 168,830 acres beyond the lowest point of late years, that of 1893-94, making the area under poppy higher than it has ever been before. The reports of the Opium Department are said to show that this increase is the result of a deliberate policy on the part of the Indian Government, which desires to make up for the lessened profit due to Chinese competition by increasing the area under poppy in India. But, even if that be so, it is absurd to speak of discredit attaching to the British name because of its connection with the opium trade.

THE ILL EFFECTS OF TOBACCO are not fully experienced, even when smoking is indulged in to excess, unless much alcohol is consumed by the smoker at the same time. That is a well-known fact, but the cause of the peculiarly disagreeable effects sometimes produced by the combination of tobacco and alcohol has never been clearly understood. In a note on the subject, in last week's *Lancet*, it is suggested that though, even after a more than moderate indulgence in tobacco, no toxic symptoms such as headache and stupor may supervene, yet such would probably be the case if alcoholic drinking were practised at the same time. The powerfully solvent action of alcohol is said to be sufficient explanation of that, since nicotine and pyridine are very easily soluble in alcohol. It is pointed out that the chief poisonous constituent of tobacco smoke is pyridine and not nicotine. The former is a poisonous base not so easily soluble in water as in alcohol, and it is stated that it can easily be traced in the mouth of an immoderate smoker, especially of the smoker of cigars. "An alcoholic drink is therefore calculated quickly to wash out this poisonous oil and to carry it into the stomach, absorption of the poison ensuing, giving rise to definite toxic symptoms, due not so much to alcohol or pyridine bases alone as to the combined action of both in the manner indicated. Such symptoms would probably be avoided if smokers would abstain from drinking alcohol at the same time that smoking is being indulged in. Many a headache or malaise would thus be guarded against."

GROUND WOOD hardly suggests itself as being a suitable substitute for tobacco, but some Scotchmen appear to have suggested to Messrs. Wills, the well-known tobacco manufacturers, that prepared wood flour, specially treated, might prove of use in the manufacture of cheap cigarettes. As a result, they have been charged before Lord Stormonth Darling with having had in their possession ground or powdered wood resembling tobacco or snuff, in contravention of the Statute. Their own explanation of the matter is that their attention had been directed to the possible uses which might be made of ground wood or wood flour, and they experimented in a laboratory upon the material, making out of it a substitute for corks and afterwards for linoleum roofing, waterproof compounds, a special composition soap, and many other things. It then occurred to them that the material might be prepared so as to be suitable for stuffing upholstery and bedding, and, as it was deemed advisable to keep the secret of the composition, they stained the material with potassium permanganate and called it "Cellinite." Subsequently a paragraph in a newspaper suggested to them that "Cellinite" might, if properly prepared, prove of use in the manufacture of cheap cigarettes, and they wrote to several tobacco manufacturers, among them being Messrs. Wills, of Bristol. The replies being discouraging, they abandoned the attempt to sell the material to tobacco manufacturers, but meanwhile the authorities had heard of the matter, two Excise officers appeared and seized everything in the respondents' laboratory, and the Lord Advocate has been instructed to proceed against them for alleged contravention of the Statute.

A PRACTICAL ACQUAINTANCE WITH FOREIGN LANGUAGES should become more general if the new examination scheme of the Society of Arts has the reception it deserves. The idea is to hold oral examinations in French, German, and Spanish, other languages being added to the list as a demand arises, and it is hoped that eventually it may be possible to require all persons who present themselves for examination in modern foreign languages to pass a *vivâ voce* examination as well as a written one. Examinations in the three languages mentioned will be held at suitable dates, at any of the Society's examination centres, and particulars as to fees, etc., will be found in the *Journal of the Society of Arts* for January 31. Candidates will be expected to satisfy the examiners in dictation, reading, and conversation, while those who can express themselves fluently in the language selected will receive a certificate of proficiency in colloquial French, German, or Spanish, as the case may be.

ANTIDOTES FOR MORPHINE are numerous, but the *Medical Press* is of opinion that of all the reputed physiological antidotes of morphine none would seem to compare with cocaine. That alkaloid is said to exert a very marked antidotal action, even at an advanced stage of morphine poisoning, and the only drawback to its use is that the doses required to combat the toxic effects of opium or its alkaloid are so large that the patient, on recovering therefrom, may have to go through a stage of cocaine poisoning, which is associated with very distressing sensations. It is recommended that half-grain doses of cocaine be given at intervals of half-an-hour, until consciousness returns and breathing is normal.

A CONGRESS OF NATURAL PHILOSOPHERS will be held at Carlsbad, from September 21 to 28, being the seventy-fourth annual meeting of German philosophers and physicians. The world-renowned health resort will be an ideal place for such a meeting of men of science, the more especially as all classes of the population—particularly the municipality and practising physicians—are said to be already busily engaged in making arrangements for a worthy reception of the members of the Congress. The participators in the meeting will not only be able to become acquainted with the results and developments of all the latest investigations in the various sections of the Congress, but also with many facts concerning local matters of balneological, hygienic and geological interest. Carlsbad as a town and health resort also affords, in its various institutions and mineral springs, extensive material for investigations.

NEW REMEDIES.

Chloral Hydrate as a Vesicant.—Bonnet employs chloral hydrate as a vesicant in the following manner :—About 3 Gm. of chloral hydrate is spread over the surface of diachylon plaster, 12 × 15 Cm., and placed on the skin, which has been previously well rubbed over with oil of sweet almonds, or with vaseline. In fifteen minutes the patient experiences a sensation of warmth, which gradually increases to burning. The plaster is then removed, and the part covered with cotton wool. In twenty to thirty minutes a blister is formed, and the patient sleeps, due to the absorption of the chloral. For this reason the application of the chloral blister to young children should not be made over too large a surface.—*Union Pharm.*, **42**, 490.

Soluble Silver as an Internal Antiseptic.—Credé advocates the employment of colloidal silver in all cases of diseased tissue associated with the presence of strepto- or staphylococci. In some cases, the inunction of 2 to 3 Gm. daily of 15 per cent. colloidal silver ointment into the healthy skin is sufficient. In more serious cases, intravenous injection of 5 to 20 Gm. of a 0 5 to 1 per cent. solution of colloidal silver, repeated, if necessary, has been found to give relief. Toxic symptoms have not been observed to follow this method of treatment, which has been successfully employed in various severe septic cases, such as septic rheumatism, and the complications of tuberculosis and of typhoid.—*Pharm. Centralh.*, **42**, 692.

Creosote Carbonate in Pneumonia.—L. Weber (*N.Y. Med. Record*) has obtained excellent results in the treatment of pneumonia with creosote carbonate. The average daily dose was 60 grains, which was not accompanied by any gastero-intestinal irritation or nervous depression. Of nine cases treated, eight made a complete recovery, the ninth recovering but afterwards dying of hepatic and cardiac complications. The author attributes these favourable results, not to the antipyretic or bactericidal action of the drug, but to its acting as an antidote to the toxins of pneumonia.—*B. M. J. Epitome*, 1/1902-4.

Jamrosin.—Under this name the fluid extract of an East Indian myrtaceous plant has been introduced by Bocquillon Limousin, as a remedy for diabetes. The dose is 6 drops three times daily. —*Pharm. Zeit.*, **46**, 838.

SCHOOL OF PHARMACY ANNUAL DINNER.

On Monday evening, February 3, some 120 of the past and present students of the Pharmaceutical Society's School of Pharmacy assembled in the Royal Venetian Chamber, Holborn Restaurant, for the annual dinner. The chair was occupied by the Dean of the School, Professor J. Reynolds Green, and the spur tables were presided over by Mr. Richard Bremridge, Professor J. Norman Collie, Professor H. G. Greenish, Mr. Walter Hills, Mr. W. B. Nelson, and Mr. T. E. Wallis. Among the guests were Dr. J. Attfield, Dr. A. P. Luff, Dr. Isherwood, Professor J. Elwin, Mr. C. B. Allen (Vice-President Pharmaceutical Society), Mr. Michael Carteighe, Mr. E. N. Butt, Mr. R. A. Robinson, and other well-known pharmacists.

After an excellent dinner and the toast of "The King," the Chairman announced that a telegram had been received from the President of the Pharmaceutical Society, Mr. G. T. W. Newsholme, which stated that he deeply regretted his inability to be present at the dinner that evening. He (the Chairman) was given to understand that bodily indisposition was the cause of the President's absence, and he was sure that all present were extremely sorry that Mr. Newsholme could not be with them. However, they were very gratified to have the Vice-President, Mr. C. B. Allen, amongst them.

Mr. A. N. Hirst, Senior Bell Scholar, then proposed the toast of

The Pharmaceutical Society.

Mr. Hirst said that before proposing the toast of the Pharmaceutical Society he wished to make a few remarks upon the Minor Examination and the Society's School. He regretted to say that he had found the Minor Examination generally regarded as an unnecessary test for knowledge, and he had even heard it suggested that it had been adopted by the Pharmaceutical Society for purely lucrative means. Until that evening he had not had an opportunity to repudiate that absurd but prevalent statement. The cause for the Minor Examination being so regarded he thought was largely due to the inefficient training of the future chemist and druggist. He was confident that if the examiners asked questions—within the scope of the syllabus—concerning the methods of making pharmaceutical preparations on a large scale, the percentage of failures would be considerably higher even than it is. Personally, he might say that it was not till he came to the "Square" that he learnt the use of materia medica to the business of a chemist and druggist, nor was it till then that he learnt the science of dispensing and pharmacy, which should be so essential to the pharmacist. He was of opinion that it would be a good thing if the Pharmaceutical Society could make it essential—either by a much needed curriculum or otherwise—that all students, before presenting themselves at the Minor Examination, should have gone through a thorough course of instruction such as that given at the School of Pharmacy. And in regard to that School he was of opinion that it was the most efficient and best in the United Kingdom. It had not been erected by the Pharmaceutical Society for the purpose of gaining money, but to give a comparatively few students the training which was believed to be necessary. He had much pleasure in proposing the toast, coupled with the name of the Vice-President, Mr. C. B. Allen.

The Vice-President, in responding, thanked Mr. Hirst and those present for the cordial manner in which the toast had been proposed and received. Mr. Hirst had said in effect that "if all schools would do the same as our School does, there would not be so many schools doing as they do do," and that the Pharmaceutical Society's School was a most excellent one. Well, in establishing the School of Pharmacy, the Society simply carried out one of the purposes for which it was founded, viz., (1) the advancement of chemistry and pharmacy; (2) the protection of the interests of the chemist and druggist; and (3) benevolence. He thought all would agree that the Pharmaceutical Society, as represented by the Council, had done all that it could to foster the education of the pharmacist. The School had from the very first been directed by a staff of professors whose names stood out prominently in the history of pharmacy, and he ventured to think that the present staff were men of equal mark—men whose names would be handed down to posterity, and would be remembered fifty or sixty years hence, just as Pereira, Bentley, and Redwood were remembered to-day. He believed, also, that all would agree that the Society had done all it could to protect the interests of the craft and to relieve the distressed brethren. If time would permit, he could tell a great deal concerning the good work the Pharmaceutical Society is doing by means of the Benevolent Fund. And he wished to remind the present students of pharmacy that it is to them that the Society looks to carry on the good work it has been doing for the last sixty years, upon similar lines to those upon which it has hitherto travelled. For he believed that the work of the Society would be carried on during the next sixty years pretty much as it has been, viz., upon the good old lines of practical pharmacy, and the application of education and common-sense to the carrying on of the craft

Mr. CARTEIGHE proposed the toast of

THE SCHOOL OF PHARMACY.

As on all occasions when addressing an assembly of the rising generation of pharmacists, Mr. Carteighe was accorded a hearty greeting, and he proceeded in a kindly, jovial manner to initiate the present-day students into the early history of the School of Pharmacy, showing how it came to be established, and speaking in high terms of the scientific attainments of its founders. He pointed out that science was comparatively unknown amongst "fashionable" people in those days, and that pharmacists were really the first chemists. Dr. Attfield, who was present, would doubtless recollect that when the Pharmacy Act of 1868 was passed, a certain distinguished professor challenged the right of the Pharmaceutical Society to use the term "chemist" in connection with the qualification granted under that Act. But Dr. Attfield was able to show conclusively that the real chemist at that time was represented by the man who was also a pharmacist and chemist and druggist. The controversy was taken up by certain other professors in the *Chemical News*, and they were not only defeated, but acknowledged their defeat. Since that time a race had arisen who did not realise that position; they did not realise that nearly every discovery, prior to about twenty years ago, practically came from pharmacy, and that the brilliant men who adorned chemistry were mostly men who had been associated with pharmacy. It was generally thought that Graham's Laboratory at University College was the first school for practical chemistry in London. As a matter of fact, that was not true. The first chemical laboratory where students were taught practical chemistry was in the kitchen* of No. 17, Bloomsbury Square, and he objected to other people claiming the credit for being the pioneers of advancement in that branch of science. For ever since that laboratory was established original research work had been carried out there which entitled it to take equal rank with any similar institution. Mr. Carteighe then dwelt upon the necessity at the present time for "live" men in pharmacy, and he urged the students to make good use of their opportunities, and to determine to do well, both mentally and physically.

Professor GREEN, Dean of the School, replied, referring to the prospect of the School becoming associated with the University of London, and the likelihood of a degree in pharmacy being established in the near future.

At this stage of the proceedings Professor Green was obliged to leave to catch a train, and the chair was then taken by Professor Greenish.

The next toast was that of

THE PAST-STUDENTS,

proposed by Mr. E. T. NEATHERCOAT, who is apparently a "born speaker," his remarks being delivered in a manner which "took the house by storm." He commenced by referring to the brilliant successes of past-students of the School of Pharmacy, mentioning Dr. Luff, in the world of medicine; Professor Greenish, in pharmaceutics; and Alderman Robinson in municipal affairs, besides others who had taken a prominent part in local politics, and, being "Square" men, had acquitted themselves well. He coupled with the toast the name of Mr. Walter Hills, an old student and a past-President of the Pharmaceutical Society.

Mr. HILLS replied, complimenting Mr. Neathercoat on his ability as a public speaker, and remarking that if there was no other use in the School of Pharmacy Students' Association than the bringing out of such eloquence as that displayed by Mr. Neathercoat, the Association has justified its existence. Mr. Hills then went on to refer to the past history of the School, and recommended present students to take the late Mr. G. F. Schacht, of Bristol, as their ideal of what a pharmacist should be.

OTHER TOASTS

included "The Demonstrators," proposed by Professor GREENISH, and responded to by Mr. T. E. WALLIS; "The Secretaries," responded to by Mr. J. S. HILLS, and "The Chairman," proposed by Mr. R. A. ROBINSON.

A good musical programme had been arranged, including a pianoforte solo by Mr. H. S. Coupland; songs by Professor Elwin and Mr. F. G. Hines; duets by Messrs. G. R. Cleghorn and M. W. Stranack; and a part-song by the "celebrated 'Square' quartette"—Messrs. H. S. Phillips, A. G. C. Paterson, R. A. Robinson, and H. G. Mitchell. Everything passed off without a hitch, thanks to the excellent arrangements of the Dinner Committee and the Hon. Secretaries, Messrs. J. S. Hills and E. T. Neathercoat.

HUDDERSFIELD CHEMISTS' ASSOCIATION.

A meeting of this Association was held on February 4 for the transaction of routine business. The PRESIDENT, Mr. R. C. Walshaw, occupied the chair, and the meeting was principally concerned with the arrangements for the forthcoming dinner, to be held on February 26. It was decided to extend a welcome to any member of the craft residing in Huddersfield and the neighbouring towns who may desire to be present. Tickets (3s. 6d. each) for the dinner, at which Mr. Newsholme, President of the Pharmaceutical Society, and Mr. Glyn-Jones are expected to be present, may be obtained from the President, Mr. R. C. Walshaw, or the Secretary, Mr. J. W. B. Johnson, 4, Birkby Hall Road, Huddersfield.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.

At a meeting held in the lecture theatre, 17, Bloomsbury Square, London, on Friday, January 31, Mr. RICHARD A. ROBINSON, junr., took the chair, and

Mr. C. E. MALE read a paper on

APIS MELLIFICA.

He said he proposed to deal with the anatomy and life history of the honey bee, the subject of bee-keeping having lately been treated in a very able and practical manner by Mr. S. T. Frost, part of whose paper was published in the *Pharmaceutical Journal* for February 1. Mr. Male's paper was illustrated by a number of lantern slides and followed with interest by all present. At its conclusion Mr. F. C. HANBURY explained the construction of a modern bee-hive, which, together with other apparatus, combs, etc., had been kindly lent for the occasion by Messrs. Lee and Son, Silver Street, W.C.

Mr. T. E. WALLIS, B.Sc., also described some experiments, which showed that the antennæ of the bee were organs of smell; and that although each compound eye of the bee consisted of about 3,000 lenses, there was in all probability only one image of any object conveyed to the brain of the insect.

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* The laboratory here referred to occupied part of the present lecture theatre, and it was not opened for the reception of students until October, 1845. The original laboratory, as explained in an illustrated article which appeared in the *Pharmaceutical Journal* of September 12, 1896, was on the second floor, in a room now occupied as the house-porter's bedroom; it was opened in October, 1844, and among the students who worked there during the session were Daniel Hanbury and G. F. Schacht, also J. B. French and William Johnson, both of whom—as recently pointed out—helped to establish pharmacy in Victoria upon a proper basis.

Other questions having been asked by some of the students and replied to by Mr. Hanbury and Mr. Male,

The Chairman proposed and Mr. E. T. Neathercoat seconded a hearty vote of thanks to Mr. Male for his paper; also to Mr. Wallis for manipulating the lantern, and to Mr. Hanbury. The votes of thanks were acknowledged by these gentlemen, Mr. Male expressing his indebtedness to Mr. Holmes, the Curator of the Society's Museum, and to Mr. Lee for the loan of the hive and various other specimens of interest. The meeting then terminated.

SOCIETY OF CHEMICAL INDUSTRY.

Nottingham Section.

The fourth meeting of the present session was held on January 29 at the Station Hotel, Burton-on-Trent, Mr. L. Archbutt in the chair. There was a large attendance, including Messrs. Adams, Jackson, Timmans, and White, from Derby.

Mr. F. J. R. Carulla read a paper on

Emergencies in Vitriol Works,

in the course of which he made some recommendations applicable to all industrial establishments. Thus, he pointed out, the facility with which repairs can be executed in cases of emergency where all machinery and appliances are constructed to standard pattern, so that the parts of one machine are interchangeable with the corresponding parts of another.

Mr. W. G. Timmans opened the discussion, saying he had expected from the title that the paper might have treated of personal accidents. The best remedies to be applied in such cases were not always known, and he thought that if a code of rule to be followed in emergencies of that kind were drawn up it would be a good thing.

Mr. John White said in regard to the question of burns with acids that an emulsion of raw linseed oil and lime water, which was a remedy well known as carron oil, was the best to apply.

The Chairman said it seemed to him the first thing to do in case of accident with an acid would be to drench the attacked part with water, so as to get rid of the acid as quickly as possible.

Messrs. O'Sullivan, Lott, Shearer, and Calder also took part in the discussion, at the conclusion of which

Mr. J. T. Wood gave a short account of

Erodin,

and exhibited specimens of this substance, which is taking the place of other and less agreeable substances in the process of tanning, and thus doing away with an objectionable feature in the leather industry.

Mr. James O'Sullivan then read a note on the

Nature of the Fermenting Power of Yeast,

proving that the character of this operation was more chemical than vital, as was at one time supposed.

The proceedings then terminated.

Liverpool Section.

A meeting of this Section was held at University College, Liverpool, on January 31, Mr. C. Longnet Higgins in the chair.

Mr. T. H. Byrom read a paper on

The Solvent Power of Phosphoric Acid,

in which he explained that syrupy phosphoric acid had proved to be an excellent reagent for getting ferro-chromium alloys and also crome iron ore into solution in a very short time. Details of the process were given.

Mr. Eustace Carey then read a paper in which he embodies

Some Observations on the Factory and Workshops Act

and the Alkali Bill of 1901. Dealing with the Factory Act, Mr. Carey called attention to some of the new regulations affecting dangerous employments, and remarked that no fair employer had anything to fear from these, drastic as they might appear to be, as he did not think the regulations would be worked in a vexatious manner. Regarding the Alkali Bill of last session, he pointed out that some of its provisions appeared to involve a new departure in alkali works legislation. They would have had no difficulty, however, in complying with the increased stringency which the Bill prescribed so far as sulphuric acid was concerned, but he considered that that increased stringency was not permissible in the case of some other processes now in use, and was calculated to delay the introduction of certain new processes. He indicated the position which was taken up by the alkali manufacturers regarding the Bill, and said that while the measure was not passed, they might expect another Bill to be brought in this session on somewhat similar lines. He hoped that this new Bill would embody some at least of the views which had been put forth by the alkali manufacturers. In conclusion, Mr. Carey remarked that while no doubt technology was the principal object of their Society, it was important that they should watch Parliamentary proceedings with ever increasing care and take an active interest in all matters which affected the progress of chemical industry.

A brief discussion followed, and was taken part in by the Chairman, Dr. Campbell Brown, and Mr. Smetham.

MANCHESTER PHARMACEUTICAL ASSOCIATION.

At a meeting held on January 29, in the Chemical Club Room, Victoria Hotel, Manchester, Mr. G. S. Woolley in the chair, a paper of great interest to pharmacists was read by Mr. James Grier, lecturer at Owens College, who took as his subject

Pharmaceutical Education.

The author expressed the opinion that a youth who wishes to become a pharmacist should first pass a preliminary examination in general knowledge and become registered as an apprentice or student. He should then serve an apprenticeship of four years, during which time he ought to be taught the elements of practical pharmacy and dispensing, the Society defining those things he must be taught. He should also be allowed time for study and permission to attend classes in botany, chemistry and physics, either day or evening, so that he may be able to present himself for the intermediate examination in these subjects, or obtain the group of certificates which would be accepted in lieu of such examination as evidence of satisfactory knowledge. He would then be in his twentieth year, and it would then only be necessary to spend six or nine months at a recognised school of pharmacy before presenting himself for the qualifying examination in pharmacy and dispensing, materia medica, and pharmaceutical chemistry; or, as an alternative, he may serve three years' apprenticeship and spend the fourth year at a University College, taking the subjects for Inter. B.Sc., including biology, and present himself for the qualifying examination in March of his second year at college. This alternative course would be specially useful for those who wish to go into the manufacturing or analytical departments of the wholesale and larger retail houses, also for those who wished to go on to a degree and qualify themselves for acting as public analysts in foods and drugs in conjunction with retail pharmacy. The advantage of such a course would be that the two years which are now spent in preparing for the Minor and Major Examinations, and at present count for nothing in going on to a degree, would then form part of the three years' course of study necessary for a degree in science, where pharmacy, including materia medica and pharmaceutical chemistry, would be accepted as one of the subjects for such degree.

The **Chairman** said he agreed with the suggestion as to the training of apprentices, and of apprentices having time for study. He was also in accord with the suggestion to divide the qualifying examination. He thought, however, that Mr. Grier was a little too pessimistic as to the qualifications of those gentlemen who passed the Minor Examination of the Society. In any examination of a number of students, it must of necessity occur that one or two would get through who were not quite competent; but he was inclined to think that if those examinations were delegated to another body, as Mr. Grier had suggested, those opportunities of escape would be more numerous. Neither could he agree with Mr. Grier as to the Major Examination having served its day, as he knew from personal experience that a great number of the public recognised the difference between a Major man and others.

Mr. H. **Kemp** said there was reason to believe a scheme could be formulated which would be workable, both from the masters' and the apprentices' points of view, but he did not know how far technical education, as supported by the State, would enable them to achieve their object.

Professor **Pope** stated that during the last five or six years he had been in charge of a chemistry department at one of the large London technical colleges, where pharmacy students who attended evening classes were always regarded as being unsatisfactory. It appeared to be their ambition to get through the qualifying examination and then finish with chemistry. It almost seemed, therefore, as if the system in vogue in training pharmacists involved cramming. If a student passed in a certain subject one time and failed in the same subject on a subsequent occasion, that was an infallible indication that he had been crammed in that particular subject. The first time he had luck; the second time his luck failed him, and a scheme of compulsory education was requisite to do away with such possibilities. Pharmacy students, so far as chemistry was concerned, did not seem to regard their training as an education. They were simply learning a business in pretty much the same way as a linendraper would learn his. If that notion could be eradicated it would be a splendid thing and, if there was any real desire on the part of the pharmacy students to attend evening classes at technical schools, he was sure the technical schools would be very quick to respond; but, as a teacher at a technical school himself, he could only echo what had been said by Mr. Grier.

Professor **Weiss** said he considered Mr. Grier's views as to examinations for pharmacists were very sound, and he would like to emphasise the fact that, although only a few students attended the pharmaceutical classes at Owens College, yet the results were very satisfactory, since the students went through a lengthy course of instruction. There was a danger of students endeavouring to become prepared for examination in too short a time, and it was, therefore, necessary to prescribe a due course of education, with a definite time over which that education should extend. It would be a wise thing to induce apprentices to take up some subjects which would relieve them and help them in their examination, but, unless it were made compulsory, apprentices would not be able to take classes of the kind suggested, as they would generally be fully occupied with their work in the pharmacy. From an educational point of view, the division of applied sciences would be a very desirable thing. In the joint board examination for medical men a student was allowed to take the chemistry and physics at one time, while he took the botany at another. The subjects for the Minor Examination could be divided in the same way and, if Mr. Grier's suggestion were adopted, some part of the present Major Examination might be included in the second part of the Minor Examination. Since pharmacy was taking up part of the profession of medical men, adequate training was required, and anything that would tend to raise the standard of examination would tend to raise the standard of the profession. If the Major Examination was to be dropped, some provision should be made to give a degree in pharmacy.

Mr. **John Taylor** said he had never felt that the scarcity of apprentices was in any degree caused by the Preliminary Examination standard being too high. If a curriculum were made compulsory, apprenticeship should not begin until the Preliminary was passed, as it would be absurd to expect a boy to study scientific and technical subjects when he had not time to do so. In his own case he allowed apprentices time for study and advised them how to pursue their studies.

Dr. R. B. **Wild** said he had endeavoured as far as possible in his class at Owens College to provide the most suitable education for pharmacists. The object of the curriculum and of the examination was to ensure that the pharmacist when he entered upon his profession should be in the best possible position as regards skill and knowledge. The pharmacist exercised both scientific and trade functions, and there seemed to be a tendency at the present time for him to be reduced to the position of a middleman selling American goods in their original wrappers—a tendency which they could not but deprecate. The pharmacist needed a fair general education, together with a knowledge of chemistry, botany, and materia medica. Efficiency could be tested (1) by prescribing a curriculum and ensuring that a man had attended a sufficient number of classes in a certain school and under a recognised teacher; or (2) by examination, without considering where a man had received his training, but simply ensuring that at the time he came up for his examination he should be able to pass a reasonable examination. He was entirely in agreement with Mr. Grier in his suggestions for examinations. He thought the profession of pharmacy was now in a state of evolution similar to the medical profession before the Act of 1858, and that pharmacists should endeavour to obtain degrees.

Mr. J. **Rymer Young** said he was of opinion that the raising of the standard of examination had nothing to do with the scarcity of apprentices. The fact was boys' parents had begun to be cautious and, before they spent any money on education, they wanted to know what would be the result of it.

Mr. **Grier**, in reply, said his whole object had been to try and make things easier for the apprentice and his master. If a compulsory curriculum were imposed, it must necessarily follow apprenticeship. Nine months at college would be all that would be required after an apprentice had passed the scientific subjects. The Major Examination was of value from an educational point of view, but he would substitute for it something which would be of real value—namely, a degree. By taking an extra year for study the apprentice could obtain that degree.

A vote of thanks to the Chairman for presiding concluded the proceedings.

CAMBRIDGE PHARMACEUTICAL ASSOCIATION.

At a meeting of this Association, held on Wednesday, January 29, Mr. A. **Sidney Campkin**, J.P. (President) in the chair, the principal business for discussion was the breaking of an agreement among chemists of the town to close during the winter months at five p.m. on Thursdays.

The **President** explained the circumstances, pointing out that the public was gradually becoming accustomed to seeing shops closed on Thursday evenings. He hoped the meeting would reaffirm the arrangement made a few months ago.

The Honorary Secretary, Mr. Bernard S. Campkin, read a letter from a member intimating that he found it impossible to close during term time at five p.m. Other correspondence was also read, one member stating that he would close only on condition that all did so, while another declared that they ought not to lose their independence because one did not see his way to fall in with their plans. This latter view met with the warm approval of all present, and on a show of hands it was unanimously decided to reaffirm the resolution to close the shops at five p.m. on Thursdays during the winter months.

CARDIFF PHARMACEUTICAL ASSOCIATION.

At a meeting of this Association, held on Wednesday, January 29, Mr. A. Hagon took the chair, and, after a few remarks, introduced the newly-elected President, Mr. R. Drane, who then proceeded to deliver an address.

Mr. Drane advised chemists to introduce and push the sale of

Their Own Specialties

in preference to selling other people's goods, and his address gave rise to a prolonged discussion, in which several members took part. Subsequently,

The Annual Dinner

of the Association was held at the Park Hotel, Cardiff, under the presidency of Mr. Robert Drane, who was supported by Principal Griffiths, Dr. Patterson (President of the Cardiff Medical Society), Dr. W. Sheen, Dr. C. T. Vachell, Mr. Austin Jenkins, and others, more than forty persons being present. The toast of "The Cardiff and District Pharmaceutical Association" was submitted by Mr. Isaac, of Neath, and responded to by the Chairman and Secretary (Mr. Bellamy). Other toasts followed, and during the course of the evening a handsome illuminated address was presented to Mr. Hagon, the retiring President, in recognition of his labours in helping to establish the Association.

SHEFFIELD PHARMACEUTICAL SOCIETY.

A meeting of this Association was held on Wednesday, January 29, to consider the paper on

Provincial Schools of Pharmacy,

read by Mr. Paterson at the Dublin meeting of the Federation of Local Pharmaceutical Associations. Mr. J. Austen presided, and the proceedings were opened by the reading of a letter received from Mr. Newsholme, President of the Pharmaceutical Society, who was unable to be present.

Mr. Austen did not think the time had yet come for a general system, and pointed out that a curriculum was provided for in the new Pharmacy Bill. He sympathised, however, with the objects of the writer of the paper.

Messrs. Antcliffe, Morrison, and Squire having spoken, the President proposed, and Mr. Morrison seconded:—"That while sympathising with the objects of Messrs. Paterson's scheme, it is the opinion of this meeting that no general system of pharmaceutical education, whether State-aided or otherwise, will be of any permanent service until such time as a compulsory curriculum be enforced; that this meeting, while fully recognising the objects of Mr. Paterson's hints on provincial schools of pharmacy, cannot pledge itself to further support the scheme set forth in this paper until the position of registered chemists under the 1868 Act has been legally defined on the following points: The legal right or power of the Board of Trade to grant under the Joint Stock Companies Act to any person or number of persons not registered under the 1868 Act to include in its articles of association the retailing and dispensing of poisons, and to carry on the business of chemists and druggists and assume the title of chemist."

Mr. G. Ellinor thought they had advanced far enough in education until they received their just rights from the Government. They wanted protection against the company pharmacists. Hitherto they had been doing work for the Government for nothing. He moved a resolution as follows:—"That this meeting call upon the federated and all local associations and registered chemists to use every lawful means to induce the Council of the Pharmaceutical Society of Great Britain to put into operation more fully Sections 15, 17, and 20 of the Act of 1868, including the poison regulations and carrying on business under unregistered names."

Mr. Antcliffe seconded, but the first resolution was adopted.

GLASGOW CHEMISTS' ASSISTANTS' ASSOCIATION.

At a meeting of this Association, held on Tuesday, January 28, Mr. J. P. Gilmour (President) took the chair, and

Mr. Thomas Maben delivered an address on

The Reign of Law,

as exemplified by various questions affecting the status and interests of chemists. At the outset Mr. Maben said that, for all practical purposes, the Pharmaceutical Society represents pharmacy, and, since it is the only organisation that can do so, it should be supported by all registered chemists. In order to improve the condition of pharmacy, Mr. Maben advocated shorter hours, discouragement of cutting and of the sale of proprietary preparations, greater attention to the dispensing department and the cultivation of friendly relations with medical men. Speaking of the dearth of apprentices as threatening to cut off the supply of qualified men at its source, Mr. Maben ascribed it largely to the present wretched economic state of pharmacy, which, with long hours, intermittent Sunday duty, wretched profits on proprietary articles, lack of confidence in one another, and total absence of *esprit de corps*, offers so little opportunity of a decent livelihood. For that state of things he urged that the remedy must come from within—from pharmacists themselves. Mr. Maben also stated his opinion that another reason is to be found in the growing exigencies of the qualifying examination, and to its unreasonable stringency. In conclusion, it was urged that a strenuous effort should be made to secure pharmacy for the qualified pharmacist alone, otherwise the reign of law would ultimately see the art absorbed by large joint-stock companies.

The President thought Mr. Maben's picture of the present economic condition of pharmacy was, on the whole, justified by facts, though the colours were laid on rather thickly. The recommendation to cultivate more intimate and confidential relations with the medical profession was sound and reasonable, as was that with reference to proprietary preparations. He dissented from Mr. Maben's views as to the causes of the dearth of apprentices. There was one important factor overlooked by him, namely, the growth and multiplication of new scientific industries, such as electrical engineering, for which an immense number of boys were being trained. It was idle to expect that any relaxation of the existing examination standards, or even their maintenance at the present level, would overcome the difficulty.

Mr. McCutcheon said that he did not believe scientific knowledge had any business value. What special training was required for ordinary dispensing? The existing qualification exceeded the requirements of the case.

Mr. Mallison differed from the last speaker, and said scientific knowledge was of the greatest practical value.

After further discussion Mr. Maben replied. He said he was not opposed to higher education, nor in favour of lowering the standard for the Minor. He simply insisted that they had reached and perhaps overshot the limits of stringency required for the current and immediately prospective economic demand.

CHEMISTS' ASSISTANTS' ASSOCIATION.

Those members of the C.A.A. who stayed away from the meeting held at 73, Newman Street, London, on Thursday, January 30, lost an opportunity of extending their knowledge of plant life in a most agreeable and interesting manner. The President, Mr. J. Wicliffe Peck, occupied the chair, while Mr. R. E. Lownsbrough delighted the members present by revealing to them some facts concerning Nature's law of balance which prevails in the vegetable kingdom in the form of

Plant Misfortunes.

Some are obvious, said Mr. Lownsbrough. Fire, hobnailed boots, and flower gatherers put an end to many a plant's existence, and by a unique process a good big piece of the vegetable kingdom becomes animal kingdom in the course of a year. These might fairly be reckoned as plant misfortunes, but they were not attractive. But the work of insects and their allies, so refined, so skilful, individually so small, yet, combined, so great; and the secret work of fungi, of which too often the only visible form is the completed task, produce the most delightful abundance of plant misfortunes that the most ardent student could desire. From that abundance, Mr. Lownsbrough pointed out some of the most interesting, and those most likely to be casually observed. Beginning with fungi, the species of which known to science number over 50,000, about 4,000 species being found in Great Britain, he graphically described the manner in which the various species prey upon and limit the expansion of other plants, and then went on to show the enormous amount of damage done to plants each year by insects. Mr. Lownsbrough had the whole subject "at his finger tips," and he thoroughly convinced those present that not "flesh" alone "is heir to many ills," but that every plant comes in for its share, and that so it is throughout all Nature, where

> Big fleas have little fleas upon their backs to bite 'em,
> And little fleas have smaller fleas, and so *ad infinitum*.

That being the way Nature has of regulating and ruling her hosts of children. Mr. Lownsbrough's remarks were illustrated by a large collection of leaves, fruit, and branches, collected by himself in and around London, together with photographs of various trees which he had found suffering from the attacks of fungi and insects, and at the conclusion of the lecture he was heartily thanked by all present.

NOTTINGHAM CHEMISTS' ASSOCIATION.

At a meeting held on Wednesday, January 29, in the Lecture Hall of the Conservative Club, Nottingham, Mr. A. Eberlin in the chair, Mr. A. E. Beilby delivered a very interesting lecture on

Old Belgian Cities.

The lecturer explained in his prefatory remarks that Belgium had not the grandeur and natural scenery of Switzerland or Norway, or the beauty and variety of art treasures which were to be found in Italy, but its attractions lay chiefly in the splendour of its municipal buildings, which he considered were superior to any in the rest of Europe. Crossing over to Ostend, the audience were conducted to Bruge, where they were shown a series of charming photographs of churches and buildings, upon which Mr. Beilby had much interesting information to give. Ghent, with its broad streets, handsome shops, and big squares; Ypres, the great centre of linen manufacture, with its great clock hall; Brussels, rich in the immense variety of its public buildings, with its Congress Column, palace of justice (the largest erected in Europe for over one hundred years), covering 270,000 feet, and its old buildings; Mechlin, with its cathedral tower 324 feet high; and Antwerp, described by the lecturer as growing more rapidly than any other European seaport, because it was adapting itself in a scientific way to modern requirements—these, and many other centres of historical and industrial interest were visited and described, the lecturer's faculty for racy and incisive humour being frequently brought into play in the course of his lecture. At the close of the lecture, which was illustrated by admirable and well-chosen lantern views, a hearty vote of thanks was accorded Mr. Beilby, on the motion of Mr. Gascoygne, seconded by Mr. Beachell.

BRISTOL PHARMACEUTICAL ASSOCIATION.

The annual meeting of this Association was held on Wednesday, January 29, at University College, Bristol. Mr. G. T. Turner, President, occupied the chair, and the following members were also present: Messrs. B. Allen, F. H. Blissett, H. E. Boorne, J. Cooper (Weston-super-Mare), E. W. Hill, B. Keen (Hon. Secretary), H. E. Matthews, A. L. Taylor, E. F. Young.

Mr. Turner regretted the absence of the Hon. Treasurer, Mr. Stroud, who had already tendered his resignation, and he proposed the following resolution, which was seconded by Mr. Allen, and unanimously carried, viz.:—"That we, the members of the Bristol Pharmaceutical Association, present our united and hearty thanks to Mr. J. Stroud for his valuable and able services, so freely rendered to this Association for many years as its Treasurer."

Mr. H. E. Matthews was unanimously elected to fill the office of Hon. Treasurer.

The President then referred in suitable and feeling terms to the great loss of the Association in the retirement of the Hon. Secretary, Mr. B. Keen, through failing health, and he proposed the following resolution, which was seconded by Mr. Young, and carried with acclamation:—"That the members of the Bristol Pharmaceutical Association desire to express their grateful appreciation and thanks to Mr. B. Keen for his able and efficient services so cheerfully rendered for twelve years as Honorary Secretary, and to convey their deep sense of his geniality, his devotion to the Association, and his constant endeavours to promote its welfare. They hope his health may soon be completely restored."

Mr. H. E. Boorne was then elected Hon. Secretary in his place.

The outgoing President, Mr. Turner, proposed Mr. E. F. Young to be his successor in the chair for the ensuing year. This was seconded by Mr. B. Allen, and unanimously carried.

Mr. Young, who at first could not quite see his way clear in the matter, after some little consideration, kindly consented to take the presidency for the year 1902, much to the gratification of the members present, and was thereupon at once voted to the chair.

Mr. G. T. Turner was elected Vice-President, on the proposal of Mr. H. E. Matthews, and seconded by Mr. J. Cooper.

It was decided that the Committee as at present constituted should remain in office for another year.

Mr. B. Keen proposed a vote of thanks to Mr. G. T. Turner, who had so popularly and ably fulfilled the duties of President for three years in succession. This was seconded by Mr. Boorne, and unanimously carried. Mr. Turner suitably replied, and the proceedings terminated.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

TUA-TUA. The plant which, according to the *Daily Mail* of February 8, is being used in Honolulu for leprosy with some beneficial results, and is said to be a native of Venezuela, is probably *Jatropha gossypifolia*, Linn. (Nat. Ord. Euphorbiaceæ). That is the species which has been identified by the late Dr. Ernst, of Caraccas, as the Tua-Tua of Venezuela. But there is nothing in the description of the uses of the drug given by G. Pompa in his 'Coleccion de Medicamentas Indigenas' (Caraccas, 1868) that indicates any special efficacy in leprosy. He states that a decoction of the leaves, made with a little salt, is used as a mild purgative in indigestion or other disorders of the stomach and in fevers. A decoction of the root is said to be excellent for dropsy. The milky juice obtained by cutting the young shoots is applied to ulcers of the mouth. *Jatropha gossypifolia* is found in two forms—*staphysagriæfolia* and *elegans*, from Mexico to Brazil. In British Guiana it is recorded from near Demerara; it also occurs in the Niger district in West Africa. *Jatropha curcas*, a nearly allied tropical species, has a good reputation in India as an application to indolent ulcers, and *J. gossypifolia* may therefore be expected to be similarly useful.

BLUE OR GREEN SULPHUR. When Bi_2S_3 is shaken with a solution of S_2Cl_2 in benzene, and the precipitate formed is heated to 70° C., a blue or green modification of sulphur is obtained, which is identical with Woehler's sulphur. On drying, or when treated with alcohol, it becomes yellow or white. ZnS and CdS under like conditions give a similar product, containing blue grains. This blue sulphur is considered by N. A. Orlow to be S_3, standing in the same relation to ordinary sulphur as ozone does to oxygen. The presence of benzene or of carbon disulphide is not essential to its formation. It may also be obtained by the use of toluol. With cadmium sulphide the reaction may be expressed by the equation $CdS + S_2Cl_2 = CdCl_2 + S_3$. With bismuth sulphide the composition of the precipitate is very variable, containing from 0 to 0·90 per cent. of $BiCl_3$.—*Chem. Centralblatt.*, **72**, 522.

ANTAGONISM OF MORPHINE AND ATROPINE. E. Bashfard has studied the action of atropine as an antidote to morphine poisoning, and arrives at the conclusion that it is difficult to say whether morphine and atropine are mutually antagonistic, that is to say whether morphine could save from death a subject poisoned by atropine, or *vice versâ*. The author experimented on rats, and found that if the minimum lethal dose (determined by experiment) was hypodermically injected, from $\frac{1}{12000}$th to $\frac{1}{36}$th of the minimum fatal dose of sulphate of atropine was effectual in averting death. A larger quantity of atropine was not only useless, but sometimes hastened the death of the animal by adding the toxic effect of atropine to that of morphine. Half the minimum lethal dose of morphine is fatal if combined with one-third the poisonous dose of atropine. If a larger quantity of morphine is administered the effective dose of atropine is greatly limited. The extremely small amount of atropine which can with safety be given in cases of morphine poisoning is the most important fact which observers have established.—*Nouv. Rem.*, **28**, 536, after *Archiv. Internat. de Pharm. et de Thérap.*

ANTIMONURETTED HYDROGEN. Alfred Stock and Walther Doht state that, as hitherto prepared, this gas has never been pure, containing either free hydrogen, air, or CO_2. They obtain it in a pure condition by the action of strong aqueous solution of tartaric acid, together with dilute HCl, on a powdered alloy of zinc and antimony, containing 25 per cent. of the latter metal. The liberated gas is passed through water, dried over P_2O_5, and condensed by means of liquid air, when the H_3Sb condenses as a white ring, free hydrogen not being solidified. Pure H_3Sb has a peculiar musty odour, somewhat resembling that of H_2S, and quite distinct from that of H_3P and H_3As. It is quite stable when kept from contact with air or moisture.—*Berichte*, **34**, 2,399.

I'SANO OIL. A. Hubert has reported to the *Académie de Médecine* on the purgative oil derived from the fruit of an oleaceous tree indigenous to tropical Africa and abundant in the neighbourhood of Brazzaville. The fruit is an ovoid drupe, over 3 Cm. in length, almost entirely filled with a brownish kernel, which yields on pressure 60 per cent. of oil. From this the author has isolated a new fatty acid, isanic acid, $C_{14}H_{20}O_2$, in the form of foliaceous crystals, melting at 41° C., very soluble in strong alcohol, ether, chloroform, and benzene, also in alkaline solutions, from which it may be separated in the form of crystalline salts. It acts as a powerful purgative, and is considered to be the active principle of the oil. The acid and its salts are very unstable, rapidly absorbing atmospheric oxygen, and becoming deep rose-coloured on exposure to the air.—*L'Union Pharm.*, **43**, 12.

ZINGIBERENE DERIVATIVES. In the course of an investigation on sesquiterpenes, O. Schreiner and E. Kremers have prepared several new derivatives of zingiberene. By dissolving zingiberene in glacial acetic acid, and saturing the solution with dry hydrochloric acid gas at 0° C., the *hydrochloride*, $C_{15}H_{24}{\cdot}2HCl$, is obtained by recrystallisation from alcohol in fine white needles melting at 168-169° C. The *nitrosite*, $C_{15}H_{24}N_2O_3$, is obtained in fine silky needles melting at 97-98° C. by treating a solution of zingiberene in petroleum ether, kept cold in a freezing mixture, with saturated sodium nitrite solution and glacial acetic acid. The crystalline magma thus obtained is at once pressed, washed with cold water, and recrystallised from hot methyl alcohol, avoiding prolonged heating. If heated only for a few minutes, no crystals will be obtained, and even momentary heating causes some loss, but the silky needles which separate are quite pure after washing. Zingiberene *nitrosate* has not been obtained in a crystalline condition, but it may be readily prepared by dissolving an equal volume of the sesquiterpene in glacial acetic acid, and of ethyl nitrite. This mixture is cooled in a freezing mixture, and then slowly treated with a mixture of nitric and glacial acetic acids. The mixture becomes thick and viscous, it is then treated with four times its volume of cold alcohol. On shaking, large quantities of the nitrosate separate, which when washed and purified by dissolving in acetic ether, and precipitating with alcohol, forms a yellowish powder melting at 86-88° C., with decomposition. The *nitroso-chloride* is obtained as a white precipitate, melting at 96-97° C., by dissolving zingiberene in an equal volume of glacial acetic acid and of ethyl nitrite, cooling the solution in a freezing mixture, and treating with twice the volume of zingiberene used, of a saturated solution of hydrochloric acid gas in glacial acetic acid. After a minute or two, the mixture is treated with twice its volume of alcohol when the nitroso chloride separates as a flocculent precipitate. This is collected, washed with alcohol, redissolved in acetic ether, and reprecipitated with alcohol.—*Pharm. Archives*, **4**, 161.

THE QUALIFICATION OF DISPENSERS.

'A Manual for Assistant's Examination. Apothecaries' Hall.' By Mabel F. Stanley, Qualified Dispenser, Apothecaries Hall. Pp. 281. Price 3s. 6d. London: Henry Renshaw, 356, Strand. 1902.

At a time when the qualification of dispensers of medicine is under serious consideration by a Committee appointed by the Council of the Pharmaceutical Society, this work is of especial interest, as showing to a certain extent what the Society of Apothecaries of London requires of candidates for its assistant's certificate. The examination of the Society for a certificate of qualification to act as an assistant in compounding and dispensing medicines consists of two parts—a practical examination in the compounding and dispensing of medicines, and an oral examination in chemistry, materia medica, pharmacy and the translation of prescriptions. The practical examination begins at 10 a.m. and the oral examination at 2 p.m. on the same day. Presumably, therefore, the candidate is not under examination for a longer period of time than three hours in either part. So far, however, as the practical examination is concerned, the candidate's fitness is further ensured by the fact that he or she must have presented a certificate signed by a registered medical practitioner, or an Assistant of the Apothecaries' Society, holding a public appointment, from whom instruction in practical pharmacy has been received by the candidate for six months. But the requirements in chemistry, materia medica and pharmacy appear absurdly inadequate when compared with those of the Minor examination, the more especially when it is borne in mind that a candidate is credited at the Apothecaries' Hall with any subject in which he may satisfy the examiners, and, further, that all the information candidates need to know is apparently contained within the covers of Miss Stanley's little volume of less than three hundred pages. The requirements in the subjects of the oral examination are specified in the following extracts from the

Regulations Relating to the Assistant's Examination.

CHEMISTRY.

The general principles of chemistry. Meaning of chemical symbols and formulæ. Distinctive properties of acids, bases, and salts. The preparation and properties of the elements: oxygen, hydrogen, nitrogen, chlorine, bromine, iodine, carbon, sulphur, phosphorus, arsenic, and their more important compounds with oxygen and with hydrogen. Hydrochloric, nitric, and sulphuric acids, and their action upon the common metals, metallic oxides, and carbonates. The chemical composition of water and air. The preparation, properties, and tests of the following:—

Ammonium carbonate, chloride, and nitrate. Sodium hydrate, borate, carbonate, bicarbonate, chloride, nitrate, sulphate, and sulphite. Potassium hydrate, carbonate, bicarbonate, bichromate, bromide, chlorate, cyanide, iodide, nitrate, and permanganate. Calcium oxide, hydrate, chloride, carbonate, and sulphate. Magnesium oxide, carbonate, and sulphate. Alum. Zinc oxide, carbonate, chloride, and sulphate. Iron reduced, peroxide, protosulphate, persulphate, perchloride. Lead metal, oxides, acetate, subacetate, and carbonate. Silver metal, oxide, and nitrate. Copper metal, nitrate, and sulphate. Bismuth metal, oxide nitrate, and carbonate. Antimony oxide, and chloride and tartar emetic, Mercury oxides and iodides, calomel, and corrosive sublimate. Alcohol, ether, acetic ether, chloral hydrate, chloroform, iodoform, glycerin, quinine, and strychnine. Hydrocyanic, acetic, tartaric, and citric acids, and their common salts.

Candidates will be expected to have performed or to have witnessed experiments illustrating the principal properties of the substances mentioned in the Syllabus

MATERIA MEDICA AND PHARMACY.

Candidates will be required to show a knowledge of the chemical and physical characters, the composition, and doses of the articles and preparations included in the British Pharmacopœia, 1898, and to recognise the following substances:—

Acidum Arseniosum, Acidum Benzoicum, Acidum Carbolicum, Acidum Gallicum, Acidum Hydrocyanicum Dilutum, Acidum Salicylicum, Acidum Tannicum, Alumen, Ammonii Carbonas, Ammonii Chloridum, Antimonium Tartaratum, Borax, Calx Chlorinata, Carbo Ligni, Cupri Sulphas, Ferri et Ammonii Citras, Ferri et Quininæ Citras, Ferri Carbonas Saccharatus, Ferri Phosphas, Ferri Sulphas, Ferri Sulphas Exsiccatus, Ferrum Redactum, Ferrum Tartaratum, Hydrargyri Iodidum Rubrum, Hydrargyri Oxidum Flavum, Hydrargyri Oxidum Rubrum, Hydrargyri Perchloridum, Hydrargyri Subchloridum, Hydrargyrum, Hydrargyrum Ammoniatum, Iodum, Magnesii Sulphas, Phosphorus, Plumbi Acetas, Plumbi Iodidum, Plumbi Oxidum, Potasii Bromidum, Potassii Chloras, Potassii Iodidum, Potassii Permanganas, Potassii Sulphas, Potassii Tartras Acidus, Sodii Sulphas, Sulphur Sublimatum, Sulphur Præcipitatum, Zinci Sulphas.

Æther, Amyl Nitris, Chloral Hydras, Chloroformum, Iodoformum, Paraldehydum, Spiritus Ætheris Nitrosi, Spiritus Rectificatus.

Aconiti Radix, Aloe Barbadensis, Aloe Socotrina, Aloinum, Ammoniacum, Araroba, Asafetida, Belladonnæ Radix, Calumbæ Radix, Camphora, Cannabis Indica, Cantharis, Catechu, Cinchonæ Cortex, Cascara Sagrada, Cocæ Folia, Colchici Cormus, Colocynthidis Pulpa, Conii Fructus et Folia, Copaiba, Cubeba, Digitalis Folia, Elaterium, Ergota, Filix Mas, Gentianæ Radix, Glycerinum, Guaiaci Resina, Hyoscyami Folia, Ipecacuanhæ Radix, Jaborandi Folia, Jalapa, Kino, Myrrha, Nux Vomica, Oleum Morrhuæ, Oleum Ricini, Oleum Terebinthinæ, Opium, Physostigmatis Semina, Podophylli Resina, Podophylli Rhizoma, Quassiæ Lignum, Quininæ Sulphas, Rhei Radix, Santoninum, Scammoniæ Resina, Scammoniæ Radix, Scilla, Senegæ Radix, Senna Alexandrina et Indica, Strophanthi Semina.

It should be evident, from the foregoing extracts, that no great tax is imposed upon the candidate's receptive capacity, but that fact is brought into still greater prominence by Miss Stanley's book, the chief object of which, as stated in the preface, is to provide students with a guide of moderate dimensions, which should prove a useful adjunct to the ordinary text-books on chemistry, materia medica and pharmacy, and so assist them to pass the Assistant's Examination creditably. Moreover, there is good reason to believe that this manual is intended to replace rather than supplement the ordinary textbooks, since the latter are alleged to embarrass and dishearten the student, by the inability of the latter to confine his or her attention to the needful matter, while the subject-matter of this manual is limited to "that which is alone necessary," arranged in the order given in the Regulations issued by the Society of Apothecaries. The cram-book is here defined in all its nakedness, and within that category it may be anticipated Miss Stanley's little manual will be permanently included.

In the space of thirty-five pages, each measuring 6½in. by 4in., the authoress states "that which is alone necessary" about chemistry, including a list of the elements and their atomic weights; the laws of chemical combination; notes on quantivalence, atomicity and valency; and monographs on the preparation, properties, tests and compounds of the more important elements. No good purpose would be served by quoting examples of the information given in this section, strong as is the temptation so to do, and it must suffice to state that what is stated by the authoress appears totally inadequate, even for a cram-book. In part two, the subject of analytical chemistry is dealt with in five pages. Under "Iron," it is stated that the addition of potassium ferrocyanide solution will "turn a Prussian blue," but the authoress fails to intimate how the Prussian is to be caught, in the first place Again, cyanides are said to "smell of bitter almonds," and benzoin, when heated, of "incense." Further, in order to identify glycerin, the student is told to heat it until acrolein is given off, or to add nitric acid and so form nitro-glycerin!

The third part of the book is grandiloquently headed, "Official Pharmacy," but it is limited to more or less inaccurate descriptions of "pharmaceutical and chemical processes for obtaining drugs (*sic*) from their crude sources." Then follow (1) a list of Latin terms supposed to be used in prescriptions, though but few of them will be found in such documents nowadays; (2) brief descriptions of the different kinds of preparations in the British Pharmacopœia; (3) incomplete or untrustworthy definitions of alkaloids, glucosides, fats, oils, etc., balsams being described as mixtures of oleo-resin with benzoic or cinnamic acid, and other important bodies in similarly vague terms. With the exception of the foregoing matter and some thirty pages of "Notes on Dispensing" at the end of the manual, the volume consists of the B.P. monographs very much condensed, no information being conveyed beyond what can be found in the Pharmacopœia itself, while what is given has suffered in the process of condensation, and must fail to convey definite ideas to students whose misfortune it may be to rely upon Miss Stanley as their sole guide. The "Notes on Dispensing" fail to do justice to the capacity and possibilities of the English language, though they may prove useful for reference purposes to students who have previously been shown practically how to perform the different operations inadequately described by the author.

To sum up, the book under consideration is totally insufficient as a guide for dispensers of medicine, and not worthy of any attention from a pharmaceutical point of view, the only reason for dealing with it so fully in these columns being that it seems to afford a fair criterion of what holders of the assistant's certificate of the Society of Apothecaries may be expected to know. It may be suggested that such a conclusion is not justified, but experience proves that text-books of this type, provided for the use of candidates preparing for examination, are—more frequently than not—fair reflections of the state of knowledge of the average successful candidate. Unfortunately, also, as is well known, the Local Government Board and other bodies are satisfied with the appointment, as dispensers, of persons who know even less than apothecaries' assistants, though it seems anomalous, to say the least, that dispensers of medicine should be required to know so much less than sellers of poison.

NEW REMEDIES.

NARCISSUS PSEUDO-NARCISSUS AS AN EMETIC.—According to Huchard, an infusion of the flowers of the common daffodil is a safe and useful emetic. Three Gm. of the flowers is infused in 250 C.c. of hot water for twenty minutes. The dose of this infusion, which should be given hot, is 3 Gm. for children and 5 Gm. for adults. The remedy was formerly much used, but has fallen into undeserved neglect.—*L'Union Pharm.*, **42**, 538.

"VALYL" OR DIETHYLAMIDE VALERIANATE.—To replace the preparations of valerian, which they find to be very uncertain in action, H. Kionka and A. Liebrecht have introduced the valerianate of diethylamide as a definite chemical compound which gives constant physiological results. Since the taste and odour of the body are nauseous, they combine the compound, which is an oily liquid, with mutton fat, and administer it in doses of two grains, in capsules. Thus exhibited it has given good results in the nervous and utero-genital affections for which valerian was formerly prescribed.—*B. M. J. Epitome*, 1/1902,3.

MAGNESIUM CACODYLATE.—This salt, from its great solubility and the large proportion of cacodylic acid in the molecule, has been introduced into medicine by Berlureaux to replace the alkaline cacodylates. One gramme of magnesium cacodylate represents 92 Cgms. of cacodylic acid, as against 70 Cgms. of acid in the same weight of the sodium salt. Magnesium cacodylate is very soluble in water; a syrupy solution may be made containing 45 per cent. A 25 per cent. solution is slightly viscous, neutral, and generally well tolerated when administered by subcutaneous injection. As this strength sometimes causes discomfort and pain it is better to commence the administration with 1 C.c. of a 10 per cent. solution, gradually increasing the dose until the equivalent of 1 C.c. of a 25 per cent. solution is reached.—*L'Union Pharm.*, **43**, 11.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

MEETING OF THE COUNCIL.

WEDNESDAY, FEBRUARY 12, 1902.

Present:—
Mr. G. T. W. NEWSHOLME, President;
Mr. C. B. ALLEN, Vice-President;
Messrs. Atkins, Carteighe, Cooper, Corder, Gifford, Glyn-Jones, Harrington, Hills, Park, Savory, Southall, Taylor, Wootton, and Young.

The minutes of the previous meeting having been read and confirmed,

The PRESIDENT announced that a letter had been received from Mr. Horace Davenport, on behalf of the family of the late Mr. J. T. Davenport, acknowledging receipt of the resolution of condolence passed by the Council at its last meeting. He also announced that letters had been received from Mr. Gowen Cross and Mr. Storrar regretting that they would not be able to be present at the Council that morning. Also, he was sorry to have to say that Mr. Harrison, who was present at the Committee meeting the previous evening, had met with a slight accident in coming to the Society's house, and he had thought it advisable to go home. He (the President) was sure that the members of the Council all hoped that Mr. Harrison would soon recover from the effects of the accident.

The late Mr. William Martindale.

The PRESIDENT said it was his painful duty to refer to the sad death of their late colleague, Mr. Martindale. As members of the Council, they all realised that they had lost a sincere worker from amongst them. He was a man whom they all greatly admired, and his death was a loss, not only to the Pharmaceutical Society, but to pharmacy throughout the whole world. He was most assiduous in the performance of his duties, and he had held prominent positions in connection with pharmacy. Mr. Martindale was a member of Council for thirteen years—1889-1902—and a member of the Board of Examiners for ten years—1873-1882. In 1899 he was appointed Treasurer of the Society, and was elected President for the year 1899-1900. He was also President of the British Pharmaceutical Conference on two occasions, viz., at Cardiff in 1891 and at Liverpool in 1896. He was prominently associated with the pharmaceutical work contributed to the last two editions of the Pharmacopœia, and was an active member of the Council of the Royal Botanic Society. His labours in these and other directions of activity had made his name widely known and esteemed, whilst the genuineness and honesty of his character endeared him to all who came into close association with him. A striking feature in his personality was the entire absence of anything in the shape of duplicity; there seemed to be no room for insincerity in his nature. Extreme earnestness was the keynote of his character, and so much was that so that, for many years, his abnormal conscientiousness had inflicted upon him a martyrdom of worry and mental suffering—in fact, to his (the President's) mind, Mr. Martindale was a victim to his acute sense of duty. He had often heard him say that "every man is a debtor to his profession," and he thought they might say of their departed colleague that few men had so well fulfilled that obligation to his calling, and Pharmacy was ready to acknowledge with gratitude and affection the honour and benefit conferred upon her by the life-work of William Martindale—Pharmacist. He would like to add that he had received a letter of thanks from Mrs. Martindale for the wreath sent by the Council, and he had also received a communication from an old colleague on the Council—Mr. Bateson—in which he referred in feeling terms to the great loss sustained by Pharmacy through the death of Mr. Martindale.

The President then moved—

That the Council profoundly regrets the death of Mr. Martindale, and desires to record its grateful sense of the invaluable and self-sacrificing services which he rendered to the Society, and of the sustained and strenuous efforts which he ever put forth for the advancement of pharmaceutical knowledge, and the elevation of the pharmaceutical calling. The Council feels that no resolution can adequately convey the value and extent of the hard and conscientious work which as member of the Council, member of the Board of Examiners, as Treasurer, or as President of the Society, and in many other capacities, Mr. Martindale freely undertook for the benefit of pharmacists, and that no words of regret can wholly express the sense of loss which his old colleagues and fellow-workers have experienced by his death. The Council tenders its respectful and sincerest sympathy to the family of the deceased in the great sorrow that has fallen upon them.

The Vice-President seconded the motion. He said the terms of the proposed resolution clearly expressed the thoughts of all present. He had not known Mr. Martindale so long as some of the members of Council, but he had been brought into close personal contact with him in many capacities. There was no question that pharmacy all over the world, and every practical pharmacist in it, had lost a good friend by the death of their late colleague. Mr. Martindale had given of his abundant knowledge to pharmacy all his life; in fact, he was really the backbone of practical pharmacy. Everyone who had conversation with him would know that Mr. Martindale had practical pharmacy at his finger-ends, and no pharmacist could talk with him without gaining some knowledge of his business. He was sure that this personal feeling of loss was one that affected large numbers of individuals in this country, and many of those on the Council had received letters expressive of that feeling. As some of those present knew, Mr. Martindale went to the Scilly Islands a few weeks before his death for rest, and while he was there, he (Mr. Allen) happened to be in the West of England, and thus was brought more closely into contact with him, and in that connection he might mention one little incident as showing the great personal interest that Mr. Martindale took in pharmacists generally. On his return from the Scilly Islands, Mr. Martindale called upon a pharmacist in the remote town of Penzance, although he did not know him personally, and he talked with him for something like three-quarters of an hour. When he left, that pharmacist felt that he had made a friend, and since Mr. Martindale's death he had written to express his sympathy with the family and with the members of the Council. He thought that was typical of how pharmacists all the world over would regard the death of Mr. Martindale, and he felt that it would be a long time before the vacancy that had been created would be filled. He would like to express his feelings of sympathy with the relatives of Mr. Martindale, and particularly with his eldest son, who was for some time a pupil with him. He felt for Dr. Martindale considerably, as also for every member of the family.

Mr. Hills said the President and Vice-President had so fully expressed the views of the Council and pharmacists generally on the present sad occasion that it was hardly necessary to add further words to what had been said. But he felt that he should not like an occasion such as that to pass without paying his tribute of admiration of one whom he had known for over thirty years. As a pharmacist, William Martindale might be, and was, undoubtedly, regarded as a star of the very first magnitude in the pharmaceutical firmament, and that position he attained not only by intelligence and industry, but because, if ever a man had, he had his heart in his work, and because he had such a great interest in the work of his life. As a man and as a colleague he could only speak of him in terms of affection—as a man he was upright, conscientious, and honest, and as a colleague he was kind, loyal, and generous.

Mr. Atkins, who spoke with much emotion, said he could only corroborate the honourable testimony that had been borne by those competent to estimate the ability and the worth of the late Mr. Martindale. Still, he would just like to give expression to his personal regard for him. It was in 1869 that he first met Mr. Martindale at Exeter, at the meeting of the British Pharmaceutical Conference, which was presided over by the late Mr. Daniel Hanbury. At that time Mr. Martindale was in rather delicate health, and after the meeting of the Conference he went to Dartmouth, where he (Mr. Atkins) again met him, and they spent a very memorable day together, the conversation making such an impression on his mind that although it was thirty-three years ago he had a distinct recollection of it. The next time he met Mr. Martindale was at Hastings, at the Conference held in 1884, when Mr. John Williams was the President, and on that occasion Mr. Martindale invited Mr. Williams, Professor Redwood and himself to his house at Winchelsea. He should never forget the generous treatment they received at the hands of Mr. Martindale, but the one thing that impressed him was that Mr. Martindale had most diligently worked up the history of Winchelsea, and he and Mr. Williams were soon deep in converse upon the ancient history of the Cinque Ports. Another phase of Mr. Martindale's character was his extreme generosity, and on that point he would like to relate an incident which occurred in the Council room. He was speaking to Mr. Martindale one day of a pharmacist who, although a greatly esteemed man, was very poor, and he jokingly remarked how pleased the man would be to have a copy of the 'Extra Pharmacopœia,' if he could afford to buy one. The next day Mr. Martindale brought a copy of the work to him and said, "Will you please send this to your friend from me?" That was only one of many instances of his generosity. If he might venture to express an idea, he would like to say that there ought to be in the Society's house some abiding record of Mr. Martindale's personality. Whilst he believed that his memory would remain in the hearts of a great many, especially the young men whom he had trained, he thought there ought to be some permanent record of the friend who had gone.

Mr. Carteighe said he took it that the family of the late Mr. Martindale would recognise how deeply they all felt the loss the Council had sustained, and that they would not measure the amount of their sympathy and respect by what was said at that meeting. He could not trust himself to say more than that they all felt the loss very much.

Mr. Corder also said he could not trust himself to speak of the loss they had sustained by the death of his old friend, Mr. Martindale. He fully endorsed all that had been said respecting him, and could only say that whenever he was in any difficulty in regard to pharmaceutical matters he had only to write to Mr. Martindale, who immediately furnished him with a solution of the difficulty.

Mr. Cooper spoke in touching terms of the great kindness he had met with from Mr. Martindale, with whom his son was a pupil, and who had been a great friend to him in many ways.

Mr. Southall said he did not know Mr. Martindale as thoroughly as some of his colleagues, but he did appreciate his excellent work in pharmacy.

The resolution was carried unanimously, each member of Council silently standing

Appointment of a Member of Council.

The President said there was a reference on the agenda to the appointment of a member of Council to fill the vacancy occasioned by the death of Mr. W. Martindale, but he thought it would be in accordance with the feelings of all if that matter was deferred till the next meeting. He, therefore, moved, and it was carried, that the election of a member of Council in the place of Mr. Martindale be postponed to the next meeting.

Election of Council, 1902.

The Secretary said that, pursuant to Section IV. of the Pharmacy Acts Amendment Act, 1898, the following members of the Council, who were elected in 1899, retire from office in May next, but are eligible for re-election if duly nominated in accordance with the Bye-laws.

Carteighe, Michael, London.
Glyn-Jones, William. Samuel, Palmer's Green.
Harrington, John Frederic, London.
Harrison, John, Sunderland.
Park, Charles James, Plymouth.
Southall, Alfred, Birmingham.
Young, John Rymer, Warrington.

Election of Members.

The following persons, having tendered their subscriptions for the current year, were elected "Members" of the Society:—

Ashkanazy, Albert W.; Dartford
Atkinson, Robert Burrow; Retford
Baker, Oliver; Hull
Barker, Alfred A.; Earlestown
Battershill, Frank Easton; Truro
Beaton, Gordon; Dinard, France
Blair, Dugald; Bayswater
Bloor, Frederick A.; Longton
Burgess, Frederick A.; London
Burns, Andrew Bell; Ayr
Butterfield, Greenwood; Llandudno
Buxton, Sydney; London
Cannon, Herbert Henry; Liskeard
Chambers, Charles W.; Streatham
Christie, James; Largs
Clarke, W. E.; Kingston-on-Thames
Clarke, William Fox; King's Lynn
Clayton, Christopher; Oxford
Clegg, John Willie; Castleford
Cocking, Thomas T.; Brixton
Crompton, Harry Grundy; Preston
Crowther, William F.; Mayfield
Davies, Charles S.; Portsmouth
Davies, Herbert; West Norwood
Derry, Alfred; Wadebridge
Donaldson, Robert Muir; Glasgow
Fellows, Hugh; Birmingham
Fletcher, Hartley; Newlay
Fowler, Edwin; Hull
Gilmour, John; Dunfermline
Gordon, John H.; Dumbarton
Goss, John Osborne; Plymouth
Hall, James Muir; Lanark
Halley, Daniel; Aberdeen
Halley, Robert; Elgin
Harding, Charles Thomas; Ealing
Herd, Robert Stark; Kirkcaldy
Hillier, Henry Edgar; Marlborough
Hodgson, John W.; Wimbledon
Horman, Charles George; London
Horrocks, William E.; Knutsford
Hoy, Charles; Kelty
Hunt, George Paul A.; London
Ivinson, Charles Horace; Leeds
James, Ernest; Hackney
Jenkin, James; Hornsey
Lambert, James Ernest H.; Leeds
Lister, James: Kensington
Llewellyn, Thomas; Ogmore Vale
Longstaff, Henry; Whitley Bay
McCabe, Aubrey Joseph; Croydon
Machin, Harold; London
Mackinnon, Thomas; Govan
Mannox, Margaret M.; Birmingham
Martin, Harry; London
Matthews, William; Cirencester
Munro, John Joyner; Glasgow
Murdoch, John; Exmouth
Neathercoat, Harry W.; London
Parry, Lewis; Everton
Paterson, James Jenkins; Penarth
Pentney, James C.; Dalston
Phillips, Horace Stock; London
Pitchford, William T.; Kennington
Purdy, Ernest Gibson; Seacroft
Quarmby, Thos. W.; Macclesfield
Robinson, James S.; Wolverhampton
Sampson, Howard A. C.; Barnet
Sanguinetti, Frank J.; Ealing
Scupham, Herbert; Chelsea
Smith, Norman S.; Coleford
Smith, Frederick L.; Southsea
Somerton, William K.: Croydon
Stiles, Percy C. G.; St. Ives (Hunts)
Surfleet, Arthur G.; Gainsboro'
Tavener, William S.; Farnham
Teiffel, Leonard John; Streatham
Tipper, Walter; Bury
Todd, Edwin Hodgson; Burslem
Walker, George Turton; Holloway
Walsham, William; Acton
White, Frederick E.; Tooting
Williams, William N. P.; Holywell
Woodward, Henry.K.; Halifax

Election of Student-Associates.

The following persons, having tendered their subscriptions for the current year, were elected "Student-Associates" of the Society:—

Baker, Charles Ballard; Nuneaton
Barbour, Archibald; South Shields
Barritt, Edward Coventry; Dalston
Blenkinship Francis T.; Appleby
Brittain, Richard H.; Grantham
Coates, Walter; Wisbech
Colley, Walter H.; Birmingham
Cooper, Charles Hook; London
Cope, Frank Youl; Ely
Culverhouse, Albert H.; Colchester
Davies, William John; Ton Pentre
Dent, John Stephenson; Hornsea
Edwards, J. McConnochie; London
Fielding, Michael Angelo; Cork
Fisher, George F. L.; Plymouth
Hardy, Charles; Pateley Bridge
Hill, William Thomas; Chorley
Hinchco, John H.; Stoke-on-Trent
Hutcheon, John; Fife Keith
James, Ernest W. H.; North Shields
Lawman, Frederick Albert; Brighton
Lucas, Arthur; Blackburn
Macgregor, John F. S.; Birmingham
McMillan, Matthew; Kilmaurs
Maycock, Ernest; Derby
Moffat, Percy Wreford; Yeovil
Moffatt, Irving P.; Camborne
Osborne, Harold Edwin C.; Plymouth
Ostle, Thomas W.; Workington
Parsons, Frederick Thomas; London
Pine, George; Bristol
Shield, William; Stanley
Smith, Edgar; York
Talbot, John; Halifax
Thomson, Peter James; Cullen
Trinder, Charles Garnet; Cirencester
Verrill, Robert; Redcar
Watkins, Ernest Arthur E.; Bwlch
Waugh, Herbert L.; Southport
Williams, Arthur; Hayle.

Diplomas.

The undermentioned, being duly registered as Pharmaceutical Chemists, were respectively granted a diploma of the Society:—

Cole, William Parmiter.
Thompson, Frederick William.

Restoration to Register.

John Percy De Buriatte, 36, Lyon Street, Hebburn-on-Tyne, County Durham, having made the required declaration, and paid the restoration fee of One Guinea, was restored to the Register of Chemists and Druggists.

Several persons were restored to membership upon payment of the current year's subscription.

Registrar's Report.

The Registrar then presented his report on the Registers for the year 1901 (see page 126), and he also read the following:—

Supplementary Report on the Registers.

During the year 1901 special attention has been devoted to the statutory Registers, and no effort has been spared to induce registered persons to recognise the importance of ensuring that their names and addresses are inserted correctly in these official lists, which are constituted by law the *criteria* of qualification. Under Section X. of the Pharmacy Act, 1868, no fewer than 894 registered letters have been sent out to chemists and druggists who have failed to keep the Registrar acquainted with their whereabouts, whilst, in addition, 677 special communications have been forwarded to persons whose change of address was discovered through the instrumentality of the divisional officers of the Society. The amount of detail work in connection with the maintenance of the Registers may be gathered from the following particulars of the transactions during the past year:—

Summary.

Erasures from the Registers	873
Additions to the Registers	554
Alterations of address	1,709
	3,136

It might be pointed out that these figures refer solely to the statutory Registers, and do not take into account the very much larger volume of consequent erasures, re-entries, and amendments in the various records in charge of the Registrar.

The President, in moving that the report be adopted, said there had been a very great deal of labour attached to the rectification of the Register during the last twelve months, and the thanks of the Council were largely due to the Divisional Secretaries throughout the country; because it involved a great deal of work not only on the staff in the Registrar's office, but also upon the Divisional Secretaries, who had taken a very great interest in the work, many of them having taken the opportunity of looking up all the registered men in their district. Consequently, the Register was very much better this year than it had been, but there was still room for improvement.

Mr. Hills seconded, and Mr. Glyn-Jones asked if the report had already appeared in the Journal.

The President said this report had not been in the Journal.

The report was then adopted.

Examiners for the Council Prizes Examination.

The President moved, and it was carried, that the following persons be appointed to conduct the examination for the Pereira Medal and the Council Prizes in April next:—Professor A. Smithells, Professor M. C. Potter, and Mr. P. H. Marsden.

Finance Committee.

The report of this Committee included the following figures:—

	£	s.	d.
Balance in January	£1,468	0	0
Receipts	987	0	0
	2,455	0	0
Payments during January	1,282	0	0
	£1,173	0	0

Payments to the amount of £2,383 0s. 0d. for the current month were recommended.

The President said there was nothing in the report which called for comment, except perhaps that the payments were rather large, owing to the fact that the Solicitor's account was included. There was also a small sum for the insurance of the Presidential Badge and Chain. He moved that the report be adopted.

REGISTRAR'S REPORT.

SUBSCRIBERS TO THE SOCIETY FOR THE YEAR 1901.

	Life Compounders.	Annual Subscribers.	
		Members.	Student-Associates.
Number in 1900	365	5467	796
„ restored in 1901	1	64	
„ elected in 1901	45	428	
	411	5959	
Deaths, Secessions, etc.	12	508*	
Total Strength of the Society	**399**	**5451**	**742**

* Of these 37 have paid the life composition fee and have been transferred to the table of Life Compounders.

ANALYSIS OF EXAMINATIONS FOR THE YEAR 1901.

Number of persons registered as "Apprentices or Students" .... 70.

MAJOR, MINOR, AND MODIFIED EXAMINATIONS.

ENGLAND AND WALES.

Examinations.	Number of Candidates during the Year.	Number of Successful Candidates during the Year.	Number of Rejections during the Year.	Number of Examinations during the Year.	Average Number of Candidates at each Meeting.	Average Number of Rejections at each Meeting.	Percentage of Rejections.
Major	96	33	66	4	24·00	16·50	68·75
Minor	1,064	313	751	4	266·00	187·75	70·58

SCOTLAND.

Examinations.	Number of Candidates during the Year.	Number of Successful Candidates during the Year.	Number of Rejections during the Year.	Number of Examinations during the Year.	Average Number of Candidates at each Meeting.	Average Number of Rejections at each Meeting.	Percentage of Rejections.
Major	8	4	4	4	2·00	1·00	50·00
Minor	415	184	231	4	103·75	57·75	55·66

THE REGISTERS OF PHARMACEUTICAL CHEMISTS AND CHEMISTS AND DRUGGISTS, 1901.

Additions during the year:—		
Number of persons who have passed the—		
Minor Examination		497
Major „	37†	
Number of persons restored to the Register on payment of a fine		12
Decrease of numbers on the Register		263
		772

Erasures during the year:—	
Deaths	450
Erased at the request of registered persons themselves	17
Erased by the Registrar in pursuance of the provision set forth in Section 10 of the Pharmacy Act, 1868, after sending two registered letters, to which no answer has been received	305
	772

† These, having already been included in the number who passed the Minor, do not increase the numbers on the Register.

Number of Pharmaceutical Chemists on the Register, December 31st, 1901	**2,180**	
„ **Chemists and Druggists**	**13,420**	
		15,600

This was seconded by Mr. Hills, and carried unanimously.

Benevolent Fund Committee.

The report of this Committee included a recommendation of grants to the amount of £128 8s. in the following cases:—

Widow of an annuitant (61). Has had previous grant. (Southall.)
Widow of a chemist and druggist and subscriber (72). Has had previous grants. (Manchester.)
Former associate and subscriber (57). (Bayswater.)
Former member and subscriber (74). (Blaengarn.)
Former member (51). (Peckham.)
Registered chemist and druggist (68). Has had previous grants. (Kennington.)
Widow of a chemist and druggist (55). Has had previous grants. (Walthamstow.)
Registered chemist and druggist (78). (Bradford.)
Widow of a pharmaceutical chemist (63). Has had previous grants. (Clapham.)
Widow of a chemist and druggist (28). (Maida Vale.)

The Vice-President, in moving the adoption of this report, again directed attention to the case of Robert Valentine Honman, the orphan child of a deceased pharmaceutical chemist, who is a candidate for the London Orphan Asylum at Watford. He pointed out that the election for that institution was approaching, and he asked that all who have an influence in that election would use that influence on behalf of the boy. It was extremely unfortunate that his father had not complied with the regulations for admission to the Orphan Fund of the Society, and he should like to say there had been two or three instances recently of perfectly eligible cases for the Orphan Fund except that their parents had not complied with the regulations. Very often that was a barrier which affected some of the orphans of chemists, and he thought it would be well if Divisional Secretaries, when communicating with the chemists in their districts, would impress on the minds of those chemists who have not joined the Society the advantages that accrue to members of the Society. Another case he wished to direct attention to was that of Miss Alice Heys, who is applying for the third time for election to the British Home for Incurables. Miss Heys was the daughter of a member of the Society, and he hoped that those interested in that institution would exert their influence on her behalf.

The President emphasised the remarks of the Vice-President as to the desirability of Divisional Secretaries pointing out to non-members the advantages of being connected with the Society.

The report was then adopted.

Report of the Library, Museum, School and House Committees.

The next report presented stated that

> The Library, Museum, School and House Committee met on January 14, 1902. The usual monthly statements respecting the Society's Libraries and Museums in London and in Edinburgh were received, and particulars of these statements were published in the *Pharmaceutical Journal* for January 18, 1902. The Committee dealt with various administrative matters relating to the superintendence of the School and House, and the proper and efficient conduct of the other departments of the Society, under the charge of the Committee. The School Staff reported. Messrs. Parkinson and Son's account for £126 17s. 11d. was submitted and passed for payment. The Committee sat as a Research Committee, and received the reports of Professors Collie and Greenish on the work in progress.

The President said it would doubtless be noticed that there was no report from the Journal Committee. As was known to members of the Council, the Journal Committee was a Sub-Committee of the Library Committee, and the reason for there being no report was that the last meeting of the Journal Committee was held after the meeting of the Library Committee, instead of before it, hence the report could not be presented at that meeting. He moved that the report be adopted.

Mr. Wootton said he thought the Council ought to get more comprehensive reports from this Committee. It was an extremely important Committee, and he thought he was right in saying that 80 per cent. of the expenditure was controlled by it. Each member of the Council was responsible, and agreed to that expenditure, but in the report before the Council there were no details. He had no doubt that the money was spent quite wisely, but he thought the Council ought to have a much more detailed report. He was quite aware that when any question was asked on any particular point, the inquirer always met with polite answers, but he was bound to say that he did not get much information. Mr. Gifford asked for information at the last meeting, and he was told to state specifically what he wished to know. Two months ago he (Mr. Wootton) asked a question about a Scotch report, which he understood had since dropped out, but he had heard nothing more about it. Dr. Symes had also asked questions about the Research Committee, and about six months ago he (Mr. Wootton) asked about the Burroughs Scholarship, as he understood there were no candidates for the Scholarship, and he wished to know what became of the money. At the time he was given to understand that Mr. Carteighe was preparing a scheme to deal with the matter, but he had heard nothing of that scheme.

Mr. Carteighe: We want some money first.

Mr Wootton: We have the money.

Mr. Carteighe: We have some money.

Mr. Wootton said his point was that there was some money, and he wanted to know what was being done with it when there was no application for it.

Mr. Carteighe: It goes to the capital.

Mr. Wootton: I want to know whether we cannot have more information about the expenditure. There is absolutely nothing on this paper which justifies us in passing this resolution.

Mr. Gifford supported Mr. Wootton in his request for more detailed information. The report before the Council was entirely inadequate, being merely a stereotyped reproduction. He thought the report certainly ought to be informative. In regard to the question put by him at the previous meeting, he supposed a statement would be made from the Journal Sub-Committee next month.

Mr. Glyn-Jones: Is the Journal Sub-Committee appointed by the Council?

The President: No.

The President, in reply to Mr. Wootton, said the minute book contained fuller details than were given in the report, and it was accessible to any member of the Council. He could assure Mr. Wootton there was no desire to do anything that was not straightforward. Mr. Wootton had mentioned the difficulty of framing questions, but it was equally difficult sometimes to answer questions. In regard to the Carnegie Trust, an answer was given, and he believed the matter was to be considered at a meeting of Scottish members to be held shortly. The difficulty at present was that there was no definite scheme in existence; when there was, the matter would come up again. He had already stated the cause for there being no report from the Journal Sub-Committee. Of course, if members of the Council wished to have fuller details they could have them, but he would point out that it was not always wise to publish certain details. Moreover, every book in the Society's house was open to each member of the Council.

Mr. Harrington seconded the adoption of the report, and it was carried.

Appointment of Divisional Secretaries.

The President then moved that Mr. R. D. Doble be appointed as Divisional Secretary for Tavistock, and that Mr. W. R. Black be appointed Divisional Secretary for Halifax, in place of Mr. Clement Fielding. Every member of the Council knew that Mr. Fielding had been a very active worker in the capacity of Divisional Secretary, and he should like to express their thanks to him for the services he had rendered to the Society.

The appointments were made.

The Dispensers' Committee.

Mr. Gifford said, if it was in order, he wished to know if there was any information to bring before the Council in regard to the doings of the Committee appointed to inquire into the dispensing at public institutions.

The President said the Committee had not yet reported; although he believed it had met.

The Vice-President said he thought the Committee might be in a position to report next month. The fault was entirely his own that no report had been presented, and the only excuse he could offer was that he had been suddenly called to the West of England, where he remained for some time, and since his return he had not been able to make an appointment with one of the other members of the Committee.

Mr. Glyn-Jones said he could not allow his colleague to take the whole blame, because an appointment was made for a certain day, but he found that he would be unable to keep it, so he wrote to Mr. Allen to that effect, and his letter and Mr. Allen's crossed in the post.

Report of the Board of Examiners for England and Wales.

The following report from the Board of Examiners for England and Wales was presented:—

Report of Examinations.

January, 1902.

England and Wales:—

	Candidates.	Passed.	Failed.
Major	10	2	8
Minor	268	64	204
	278	66	212

Certificates were received from thirty persons who had applied for registration as apprentices or students.

The Board recommends that it be authorised to accept, in the under mentioned cases, the certificates specified:—

1. P. D. Oliver, Higher School Examination of the University of the Cape of Good Hope.
2. A. R. Gluntz, Königliches Marienstifts Gymnasium.
3. L. Bernhardt, Falk-Gymnasium, Berlin.

The Board reports that, after careful consideration, it is unable to recommend the acceptance of the Intermediate Scholarship Examination under the Wilts County Council Technical Education Scheme as an approved examination; as it appears that the examination is not a certificate examination, and candidates obtaining scholarship standard cannot have passed in all the subjects specified in the Bye-laws of the Society. The Board considered the various remits from the Council in connection with (*a*) the modifications in the issue of leaving certificates proposed by the Scotch Education Despartment; (*b*) Durham University certificates, and (*c*) Birmingham University matriculation certificate. A standing committee on educational matters was appointed to further consider the points involved in the foregoing communications. The Board recommends that the Council appoint a representative of the Society to attend the meeting on examinations in preliminary knowledge which is to be convened by the Conference of Head Masters'. The Board discussed the question of the sufficiency, or otherwise, of the present number of meetings of the Board during the year, and expressed the opinion that the "Major" Examination might be advantageously restricted to April and October, but that it was not desirable to curtail the number of examinations during the year for the "Minor" qualification.

The President said it might be stated that this was the first occasion on which certificates had been presented in that form, being first of all referred to the Board of Examiners before coming before the Council. In regard to the report, it was not pleasant to note the result of the Major Examination, but at the same time it was very gratifying to notice that there were thirty certificates from students wishing to be registered as apprentices. He thought it showed that matters were improving somewhat.

Mr. Glyn-Jones asked if the new departure in regard to the acceptance of certificates meant that those certificates came before the Board of Examiners twice.

The President said the certificates were first submitted to the Board of Examiners for consideration, then they came before the Council, and the Council authorised the Board to accept them.

Mr. Young asked whether the President would express any opinion as to the reason for the small number of passes at the examinations. Had the increased fee anything to do with it?

The President said he believed the smallness of the number of passes was largely due to the fact that many of the candidates come up for examination totally unprepared.

Mr. Carteighe said some of the candidates tried before the increased fee came into force because they could come up for subsequent examination for a reduced fee. It used to be thought a disgrace to fail, but now many of the candidates came up to have a shot at the examination in the hope of passing, and if they passed at the first attempt they thought it was a great achievement.

Head Masters' Conference.

The President moved, and it was carried, that Mr. J. E. Saul be appointed to attend the forthcoming meetings of the Head Masters' Conference on behalf of the Pharmaceutical Society.

Appointment of Delegates to the Sanitary Congress.

The Secretary stated that a letter had been received inviting the Society to appoint delegates to the Sanitary Congress at Manchester, on September 9-13, 1902.

On the motion of Mr. Park, seconded by Mr. Harrington, the President, Vice-President, and Mr. J. Rymer Young were appointed delegates to attend the Congress.

Mr. Wootton suggested that a paper might be submitted to the Congress, dealing with the sale of poisons.

The President expressed his approval of Mr. Wootton's suggestion.

Correspondence.

The Secretary read a letter from Mr. F. Foster, of Birmingham, who wrote on behalf of the dispensers of Birmingham and district, directing attention to the distribution of poisons by unqualified dispensers, and to the fact that dispensers are not sufficiently represented to the Society by the local officers, and he asked that a deputation be received from the dispensers of Birmingham in regard to the matters mentioned.

The letter was referred to the Dispensing Committee.

The Secretary also read a letter from Mr. A. Hagon, of Cardiff, suggesting the admission to the Society on reduced terms of the forty-seven members of the local pharmaceutical association, and a letter was read from the Cardiff and District Pharmaceutical Association suggesting the co-operation of the Council in regard to a local scheme of University training for pharmaceutical students.

These communications were referred to the Library, Etc., Committee.

The Secretary then read a letter from the Scotch Education Department intimating a further modification in the system of granting leaving certificates, and it was referred to the Standing Committee on Education.

A letter was also read from the North Staffordshire Coroner directing attention to the death of an adult person through accidentally drinking "XLall" Insecticide, and submitting the facts in connection with the fatality for the consideration of the Council.

This communication was referred to the General Purposes Committee

The public business being concluded, the Council went into Committee to consider the business of the General Purposes Committee.

NOTES IN PARLIAMENT.

The Government and Vaccination.—In the course of a reply to Mr. Bartley in the House of Commons on February 10, Mr. Long explained that the duty undertaken by the Government in 1898 was to provide lymph for primary vaccination by public vaccinators. This duty has been completely fulfilled. It has also been the desire of the Government to provide public vaccinators with lymph for revaccinations, and this has also been done to the utmost extent practicable. In ordinary times it has been found sufficient to issue from 8,000 to 10,000 charges of lymph weekly. Since, however, the epidemic of small-pox began this output has been largely increased, and the establishment is now producing some 50,000 charges a week.

Glycerinated Lymph.—The object of Mr. Bartley's questions was to induce the Government to undertake a general supply of glycerinated calf lymph. Therefore, Mr. Long went on to state that there are several difficulties in connection with the manufacture of glycerinated lymph. It takes some weeks to mature. It is important that all practicable means should be used to test its efficiency and purity before it is issued, yet it is not possible to store it to any large extent because the period for which it will keep is so uncertain. Moreover, there is great fluctuation in the demand owing to the habit of so many persons to defer vaccination until small-pox is imminent. Thus in a single fortnight recently the applications for lymph from public vaccinators, which had previously risen to four times the normal demand, suddenly more than doubled.

No Guarantee.—From the inquiries which he has caused to be made, Mr. Long understands that an ample supply of glycerinated calf lymph can be obtained from unofficial sources, and that there is no reason to doubt that it is satisfactory in quality. It would, he thought, be unfortunate at this moment to enter into competition with private enterprise in this matter. Further questioned by Mr. Bartley, Mr. Long said that there is no guarantee at all in connection with either official or unofficial lymph. By way of showing that the demand for the use of Government lymph to the exclusion of commercial lymph was not justified, he added that two years ago, when the *Lancet* instituted an inquiry, the Government lymph was placed fifth on the list of efficiency. All that the Local Government Board do is to secure the utmost care in the preparation of the lymph.

Inoculation Against Enteric.—From a reply made by Mr. Brodrick to Mr. E. Wason, it appears that the report of the civil surgeon who was specially detailed to collect information in South Africa as to the result of inoculation against enteric fever amongst the troops, has not yet been completed. When it is ready it will probably give information as to what proportion of those who have died from enteric were inoculated.

The Patent Law.—On February 10, the President of the Board of Trade (Mr. G. Balfour) brought in a Bill to amend the law with reference to applications for patents and compulsory licences and other matters connected therewith. The Bill, which was read a first time, is based on the recommendations of the committee appointed by the Board of Trade in 1900 to inquire into the working of the Patent Acts.

LETTERS TO THE EDITOR.

The Indian Opium Trade.

It is somewhat surprising to learn from the Journal of to-day that "the suppression of the opium trade (in India) would cause a distinct injury to medicine and pharmacy." I was not aware that medicine and pharmacy depended on the Indian market for opium. It would be interesting to know what society it is that "exists for the purpose of suppressing" legitimate trade in opium. There is, however, a society which exists for the purpose of suppressing that portion of the trade which is propagated with the express purpose of increasing the revenue at the expense of another nation, with results involving their moral and physical degradation. Surely the worthiness of their object is self-evident, and as the British are the said propagators it is perhaps not so very absurd to speak of discredit attaching to the British name. I am confident that such a society would not object to the production of opium, even in India, for medicinal or any other requirements which are not characterised by immorality, abuse, or oppression.

London, February 8, 1902. S. Judd Lewis.

⁂ The words "in India" are unjustifiably interpolated in the passage quoted by Mr. Lewis, as they were neither written nor implied by the writer of the note. With regard to the latter portion of Mr. Lewis's letter, it must suffice to point out that expressions of opinion are not equivalent to statements of fact.—[Ed. *P.J.*]

Bottles for Poisonous Liniments.

It is with great regret that I send you cuttings from the Halifax papers, showing the great carelessness of medical men in doing their dispensing. The Halifax Chemists' Association some time ago sent a resolution to the Pharmaceutical Council on this very subject of poison bottles in doctors' surgeries. It was referred to a committee, and nothing has been heard of it since. I was talking to a doctor last evening on this subject, and he made a remark which hit the nail on the head: "Who is going to pay the difference in price between the medicine and poison bottle?" How long are the lives of the poor patients to be risked for the sake of a penny?

Gibson Dixon, President,
Halifax and District Chemists' Association.

Halifax, February 11, 1902.

The Sale of Poisons.

After reading in the *P.J.* of February 1 the reprint *re* sale of poisons from several newspapers, I wish to express the hope that the Privy Council Poisons Committee has had laid before it fully the country chemists' side of the question. All country chemists surely take very strong exception to the remarks in the reprint. The sealed package principle would easily be made to cover 75 per cent. or more of our poison sales, and would most beautifully meet the requirements of the London and other stores who send a hamper every week to the best families in the country districts; also it would admirably suit the local man who sends a horse and cart round for orders and delivers at the door everything that he possibly can. We do not in small country towns supply 20 per cent. of our poisons for medicinal use. Country doctors as a rule do their own dispensing, as most people know, therefore we get little demand for poisons for medicinal use. Chemists have by study and expense obtained a legal qualification which entitles them to sell and dispense poisons. Why a clamouring set of traders, screening themselves behind the canting remarks of "convenience of their customers" and such like, ever expect to reap where they have not sown, the privileges which are justly ours and the property of no one else, I fail to understand. It is not a right to be obtained by paying for a licence. Our present position is sufficiently vexing, and if our main legal privilege is to be given away we shall suffer a most unjust and abominable wrong. The highly professional style of business would not bring us shoes for our feet in most of our small country towns. We rely upon our agricultural trade. We have very little else. I consider a privilege a man has earned by study, and paid for the expense of obtaining with his money, is his property, and to take it from him would be nothing short of robbery. Of course, grocers, etc., would be glad of an opportunity to enlarge their business.

Sudbury, Suffolk, February 3, 1902. James H. Brown.

Extract of Malt and Cod Liver Oil.

Can any reader of the *P.J.*, who has had experience of mixing fair quantities of malt and oil, say 5 gallons, kindly give practical details? I experimentally mixed 5 lbs. of malt extract and 20 fl. ounces of cod liver oil at a temperature of 100 F., using a Baker's whisk mixer. The result was a stiff toffee-like paste, full of air, which remains so after two months. The thick ordinary extract of commerce was used. If a thinner extract is better, please give specific gravity. Is the 15 per cent. malt and oil of the B.P.C. an emulsion or a solution?

February 8, 1902. "W. M." (119/8).

Dispensing Problems.

In the following prescriptions what would be the correct order of mixing?

(1) ℞	Ext. Nucis Vom.	Gr. ½
	Ferri Sulph. Exsicc.	Gr. i.
	Ext. Aloes Soc.	Gr. ¼
	Pulv. Glycyr.	Gr. iss.

Would one be justified in omitting part of the liquorice?

(2) ℞	Bismuth. Subnit.	ʒi.
	Sodii Carb.	ʒii.
	Mucilaginis	*q.s.*
	Aq.	ad ʒvi.

Would it be justifiable to change the subnit. to carb. or, better, to omit the mucilage? Is sodii bicarb. intended to be given?

February 12, 1902. "C. B." (70/10).

Formula Wanted.

I should be glad of suggestions or a formula for combining pepsin with an ammoniacal solution of bismuth in a fairly concentrated form, in which a drachm of combined product approximates a grain of pepsin and remains stable.

February 10, 1902. "H. H. M." (70/5).

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply.

Reports (W. R. B.—119/41).—It is not customary to do so.

Root (H. E. C.—70/6).—It is a very old specimen of madder, the root of *Rubia tinctorum*, Linné.

Dr. Fuller's Lotion (J. R. P.—70/8).—We regret we have no information about this lotion.

Chillies (A. H. H.—70/4).—We hope to be able to give you the information shortly.

Veterinary Medicine (H. W. B.—70/1).—The book you mention is as good a work on the subject as is published.

Tablet Machine (J. A. F.—120/2).—We are sending what you ask for and shall be glad to hear from you on the subject.

White Sealing Wax (H. S.—69/28).—Melt white shellac, 4 oz., then add Venice turpentine, 1¼ oz., and zinc oxide, 3 oz.

Tacciolo or Tachiol (J. A.—70/7).—This preparation has been the subject of recent newspaper paragraphs and consists, we understand, of silver fluoride. It is said to be a very powerful germicide.

Preliminary Examination (E. M.—69/29).—You will find full particulars in the Educational Supplement published with the *P.J.* of September 14 last.

Starches (G. C. R.—69/32).—Rice starch is probably the best to use as a dusting powder, because of the extremely minute and uniform granules of which it consists.

Darkening Oak Cabinet (O. J.—70/2).—Dissolve potassium bichromate, 1, in water, 15, neutralise the solution with ammonium carbonate, and make up to 20 with water.

Self-Raising Flour (W. H. D.—69/33).—Add to each pound of flour a mixture of tartaric acid, 23 grains, and sodium bicarbonate, 46 grains, or you may replace the acid by cream of tartar, 46 grains.

Fixing Drawings (T. C.—70/9).—A dilute solution of sandarac or other pale-coloured resin in rectified or methylated spirit may be applied by means of a spray, or you may employ a colourless spirit varnish diluted with sufficient alcohol.

Bryony (C. R. P.—69/31).—Bryony root (*B. alba* or *B. dioica*) contains a vesicating principle, and a formula for tincture of bryony is given in the 'B.P.C. Formulary.' Probably a mixture of that preparation with chloroform or chloroform liniment is intended.

Books (J. G.—69/30).—You will find such a list in the Educational Supplement published with the *P.J.* of September 14 last. The botany, chemistry, materia medica, and pharmacy of the British Pharmacopœia are all fully dealt with in 'Pharmacopedia' (Kimpton, 14s. net).

Therapeutics (F. L. S.—70/3).—The "most useful and up-to-date" book on the subject is the new edition of Quain's 'Dictionary of Medicine' (Longmans, 21s. net), but Lauder Brunton's 'Lectures on the Action of Medicines' (Macmillan, 10s. 6d. net) may serve your purpose better.

French Polishes (E. R. T.—69/34).—You should be able to produce almost identical polishes from the following formulæ:—(Brown) Pale orange shellac, 2 pounds; pale amber resin, 6 ounces; wood naphtha, 1 pint; methylated spirit, 3 pints; oxalic acid, ¼ ounce. (White) White lac, 1½ pounds; powdered borax, 1 ounce; wood naphtha, 3 pints. If the white lac should have been kept in water, it must be thoroughly dried before attempting to dissolve it.

Pharmaceutical Journal

SATURDAY, FEBRUARY 15, 1902.

A Copy of this Inset is inserted in every Copy of the *Pharmaceutical Journal* issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. The Inset can also be obtained by personal application, on the day of publication.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

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Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

JUNIOR wanted; one with some knowledge of Dispensing preferred; indoors.—J. WILSON, 11, George St., Bath.

AN IMPROVER or JUNIOR wanted; good-class Dispensing business (indoors).—Send photo and usual particulars to G. CRAWSHAW, Hyde Park, Leeds.

LONDON, S.W.—JUNIOR with good Dispensing experience for select business; indoors.—W., c/o Messrs. Edwards & Son, 157, Queen Victoria St., E.C.

MESSRS. CLARE & HUNT, Scarborough, require the services of a qualified ASSISTANT for first-class retail and dispensing; state salary required; indoors.

CARDIFF.—A JUNIOR of good address; about 20; indoors.—Full particulars as to salary, experience, &c., and enclose photo, D. HARRIES, 102, Queen Street, Cardiff.

AN ASSISTANT with Minor qualification wanted; about 24; must be quick, active and thoroughly well up to his work; good salary given.—Apply to A. B. C., 105, Talbot Rd., Bayswater.

WANTED, DISPENSER (qualified) for high-class Branch Store.—State age, height, salary required (outdoor), references and enclose photo, to WAND, Cash Chemist, Haymarket, Leicester.

A QUALIFIED ASSISTANT for high-class Dispensing business; outdoor.—Kindly apply with full particulars and enclose carte, S. H. SMITH, Pharmaceutical Chemist, 102, The Parade, Leamington.

MOTTERSHEAD & CO., Pharmacists, 7, Exchange St., Manchester, require an ASSISTANT, experienced in the manufacture of Pharmaceutical preparations. State fully experience, age, and salary required, outdoors.

WANTED.—A Junior ASSISTANT about 20 (North London), just out of his apprenticeship, who desires a good opportunity of acquiring a thorough knowledge of a good Retail.—Apply to CHEMIST, 126, Upper St., Islington, London, N.

Assistants Wanted—Continued

GOOD JUNIOR wanted, not under 22, accustomed to high-class Dispensing and Retail; indoors; abstainer preferred.—State experience, salary required, and enclose photo, or apply personally, R. H. PARKER, 35, Clifton Rd., Maida Vale, W.

LONDON SUBURB.—A Junior ASSISTANT wanted, for good-class business; Senior kept; abstainer preferred.—Please state age, experience, reference, salary required (indoors), and enclose photo, to J. G. ATKINSON, 25, Westow Hill, Upper Norwood, S.E.

CAPE COLONY.—Wanted a good ASSISTANT well up in dispensing; minor qualification; salary £13 month first year, £14 month second year, £15 month third year; second class passage out; usual agreement.—Apply, J.C.H., Hewlett & Son, 40, Charlotte Street, E.C.

INDIA.—Required, a qualified ASSISTANT, about 24, single, with first-class London experience and of good address; 4 years' agreement; liberal salary; passage out and free furnished apartments.—Apply, by letter, C. M., c/o Messrs. Meggeson & Co. (Lim.), 14, Miles Lane, E.C.

CHEMIST (Bachelor) wants a trustworthy ASSISTANT (indoors); unqualified; one who requires a permanency; must be a smart counterman and have good dispensing experience.—Send photo and full particulars in first letter to RHEI, c/o Pharm. Journal Office, 8, Serle St., London, W.C.

WANTED, a reliable, energetic, qualified MANAGER, for a light retail, prescribing and dispensing business in southern suburb of London.—State age, height, references, salary required indoors, and enclose photo (if convenient) to CHAS. MORROW, Pharmaceutical Chemist, Hornsea, Hull.

WANTED, to commence duties the first week in April, a good all-round man, one who can dispense, prescribe, and take charge during absence of proprietor; hours 9 till 9, half-day off each week, no Sunday duty; outdoor; 3 apprentices kept.—Apply, with full particulars, to FLANDERS, Chemist, Cambridge.

Continued on next page.

Assistants Wanted—Continued

APPLICATIONS are invited for an IMPORTANT POST (progressive) in the office of a London Drug House. Experience of Wholesale essential. Liberal salary to suitable man. Replies treated in strictest confidence.—Send all particulars, including age, detailed experience and present salary, to SENIOR, c/o Mather & Crowther, Ltd., New Bridge St., E.C.

DISPENSER (Female) wanted at the Hospital Ships, Long Reach, Dartford, Kent (under the Metropolitan Asylums Board). Salary £100 per annum, rising £5 to £120, less 10s. per week for board, lodging, and washing. Candidates must not exceed 40 years of age, must be a Licentiate of the Apothecaries Company of London, or be registered under the Pharmacy Act.—Applications to be addressed to the Medical Superintendent at once, with copies of testimonials.
Feb. 10th, 1902.

INDIA (N.W. Province).—Wanted a good ASSISTANT, well up in all branches of a Chemist's business; minor qualification; salary—1st year 150 rupees per month, 2nd year 175 rupees per month, 3rd year 200 rupees per month; free furnished apartments; second-class passage paid out; required to start early in April; candidates must hold undeniable references.—Address, INDIA, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CAPE COLONY.—Wanted, good ASSISTANT, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £150; second year, £160; third year, £170; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, CAPE, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified ASSISTANT; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to STRAITS SETTLEMENTS, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

BRENTFORD UNION.

DISPENSER.

THE Guardians require the services of a Dispenser for the Infirmary Workhouse and Schools at Isleworth. Salary, £100 per annum, with dinner and tea daily.

The appointment will be made subject to the approval of the Local Government Board and to the regulations contained in the Infirmary Order.

Applications, upon forms which can be procured at my office upon sending a stamped addressed foolscap envelope, must reach me before 10 a.m. on Wednesday, the 26th instant.

Canvassing the Guardians is strictly prohibited, and will disqualify.

By Order,
WILLIAM STEPHENS,
Clerk.

Union Offices, Isleworth, W.,
February 10th, 1902.

Apprentices

APPRENTICE required in an old-established Chemist's Business; easy hours; comfortable home; thorough instruction given.—Apply, J. CORY, Newport, Isle of Wight.

Shop Fittings for Sale

PLATE-GLASS Shelves, polished edges, 3 ft. long by 20 in., 16 in. and 12 in. standard bars and brackets, complete £3 10s. Chemist's Side Fittings, from £1 foot run. Counters from 7s. 6d. foot run. Counter Cases from 7s. foot run. Dispensing Screen, 6 ft. long, £6 10s. Cheapest house for blinds, mirrors, shelves, lamps, and window fittings.—**TREBLE & Co.**, Complete Shop Fitters, **RECTORY WORKS, RENDLESHAM ROAD, CLAPTON, LONDON, N.E.**

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM, M.P.S.; town or country; disengaged.—W. SMITH, 12, Westfield Rd., Surbiton.

MANAGER, LOCUM or DISPENSER; qualified.—S., 7, Oakden St., Kennington Rd., S.E.

ASSISTANT; qualified; 23; London preferred; disengaged. —S. B., 122, High St., Bromley.

ASSISTANT; outdoors; London; time for study.—WESTON, 54, Hillmarton Rd., Holloway, N.

JUNIOR; time for study; near Pharmacy School preferred. —J. E. CHAPMAN, Brumby, Doncaster.

SITUATION in Laboratory; qualified; 22; 6 years' experience.—BRAZIER, Brook St., Stourbridge.

QUALIFIED; 25; good experience and references.—CHEMIST, 24, Old Chapel St., Blackburn.

JUNIOR; unqualified; 23; abstainer; good experience; south preferred.—BRYANT, Cedar Lodge, Burgess Hill, Sussex.

PART-TIME; 26; tall; near a college; London experience; excellent references.—EUCAINE, Pharm. Journal Office, 8, Serle St., W.C.

MANAGER or SENIOR; qualified; 26; four years' London experience; Photography; quick dispenser.—Salary, &c., to J. H. C., 4, Stockwell Rd., S.W.

CHEMIST (qualified) desires engagement as MANAGER; South of England and small town preferred; highest references. —X. Y., c/o Pharm. Journal, Serle St., W.C.

MAJOR; 27; first-class Dispensing and Retail experience; permanent engagement as ASSISTANT or MANAGER. —C. DANN, Station Rd., Whittington Moor, Chesterfield.

MANAGER; qualified; sleep out; age 52; near London; six years' highest references; all-round experience; state salary.—ALPHA, 6, Victoria St., Cwmbran, Monmouthshire.

LOCUM TENENS; days, weeks; moderate; reliable; engagements booked forward.—T. C. BEACH, M.P.S., Windsor Edge, Inchbrook, Stroud, Glos. Telegrams: Beach, Nailsworth.

BRANCH MANAGER or LOCUM; qualified; 37; Store experience and West-end; Extractor, Prescriber, and knowledge Photography; excellent references.—STATIM, 140, Kennington Park Road.

BRANCH MANAGER; qualified; London and Provincial experience; accustomed to good-class business; quick, reliable, and trustworthy; disengaged.—CHEMICUS, Mill St., Ottery St. Mary, Devon.

EASY Branch MANAGERSHIP (near London) desired; Chemist-Dentist; married; moderate salary if house and privilege practise Dentistry.—Write particulars, DENTALIS, 165, Rucklidge Avenue, Harlesden.

ASSISTANT; 12 years' good all-round experience; able to take charge; Extractor; Prescriber; outdoors preferred; moderate salary; disengaged; reference.—DENS, c/o Mr. W. H. Gilbert, Fore St., Redruth.

WEST End or large country town as SENIOR or MANAGER, or position of trust; excellent references; large and varied experience; French and some German: Continent not objected to.—MABS, Chesterfield, St. Peter's Road, Croydon.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less 6d. Each additional twelve words or less. 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Fernie's "Herbal Simples," second edition.—Particulars and price to A. R., Pharm. Journal Office, 8, Serle St., W.C.

OFFERED.

Student's Chemical Apparatus and Chemicals, 15s.—Naylor, 6, Central Drive, Blackpool.

Dental Chair; good condition; price 5 guineas.—Dentist, 7, Osborne Terrace, Landport.

Photographic Mounts. 2,500 cabinets, 25s.; 2,000 C.D.V.'s, 7s. 6d. to clear.—Edward Peck, East Dereham.

8 oz. Musk Pods, 2s. oz ; 2 to 10 lb. Tonquin Beans, 3s. lb.; 14 lb. parcel Gum, 6d. and 8d. per lb.; 5 and 10 lb. tins Bis Brown, 10d.; samples sent of the last three.—Vaughan, 14, Leighton Street, Leeds.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

Businesses for Disposal

SCOTLAND (South). Good old-established Drug Business, convenient to Glasgow; no opposition; good returns; good profits; low rent.—Apply, Immediate, c/o Pharm Journal Office, 8, Serle St., London, W.C.

LONDON, W.—A profitable and progressive West-End Pharmacy of the highest class; about 10,000 prescriptions compounded yearly; valuable proprietaries; position and premises good; fittings and stock the best; suitable for a partnership; references and statement of capital available required with applications.—Physic, c/o Dixon's, 195, Oxford St., W.

Business Wanted

WANTED, a good-class Retail Business in small country town (Midlands preferred); must have good house attached. Capital £1,000.—Address, Cortex, Messrs. Southall Bros. & Barclay, Birmingham.

Agency

WANTED, an important
CHEMIST'S SHOP
for the Sole Sale in England of a newly-invented speciality of proved excellent result,
"Tintura Galactagoga"
(Milk-producing Tincture).

All further details by the inventor, Dr. Vives y Navarro, Diputación 247, Barcelona (Spain). (H 858 B.) Correspondence, if possible, in French.

CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., Chemists' Transfer Agents, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

The Business conducted by Messrs. Orridge & Co. has been known as a Transfer Agency in the advertising columns of the Pharmaceutical Journal since the year 1846, and is well known to all the leading firms in the Trade.

VENDORS have the advantage of Messrs. O. & Co.'s direct attention and advice as to value without any additional fees.

PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

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Chemists' Transfer Agents and Valuers,

9, NEW CANNON STREET, MANCHESTER.

VENDORS saved time and trouble by consulting before offering for sale. PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address,* "Tomtom."

Shop to Let

CHEMIST'S Splendid Opening.—Spacious Shop with plate-glass front; main road, busy and rapidly increasing neighbourhood; all adjoining shops let to old tenants; large bank in same block; excellent opportunity as branch business; rent £100; direct from owner.—View, 2, Bank Building, West Kensington (close to station). Note.—Chemist's shop recently absorbed by bank for extension.

Death

VALLANCE.—On the 8th February, at Fieldhead, Mansfield, Gertrude Daisy, the dearly loved wife of Arthur Clayton Vallance, and second daughter of the late Percy Woolley, of Manchester, in her 31st year.

The "Pharmaceutical Journal Inset" of Saturday next, the 22nd inst., will be sent to every Chemist in business in Great Britain, and to all qualified managers and assistants. It will have a guaranteed circulation exceeding seventeen thousand five hundred copies. Advertisements for Assistants, Businesses, Apprentices, Shops, For Sale, &c., &c., and for the Exchange Column, must reach the Publishers, 8, Serle Street, Lincoln's Inn, London, W.C., not later than Thursday next, 4 p.m.

17,500 COPIES.

Feb. 15, 1902.

ADVERTISEMENT INSET

A Copy of this Inset is inserted in every Copy of the ***Pharmaceutical Journal*** issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. It can also be obtained by personal application, on the day of publication, at any address in the following list.

WHERE THE INSET CAN BE OBTAINED.

Pharmaceutical Society of Great Britain.
17, Bloomsbury Square, London, W.C.
36, York Place, Edinburgh.

Also at the Advertising Agency of Messrs. G. Street & Co., Ltd., 30, Cornhill, E.C.; 8, Serle St., W.C.; and 164, Piccadilly, London, W.

London, E.C.

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Messrs. S. Maw, Son & Sons, Aldersgate St.
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Imperial College, Ludgate Circus.
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W.C.

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Mr. W. Warren, 24, Russell St., Covent Garden.
City School of Pharmacy, 27, Chancery Lane.

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Mr. E. Beaton, 5, Lonsdale Terrace, Kew Gardens.
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Mr. S. A. Sturton, 9, Goldhawk Rd.

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OXFORD.—Mr. T. J. Burbank, 116, Walton St.
PETERBOROUGH.—Messrs. Sturton & Sons.
PLYMOUTH.—Messrs. Balkwill & Co.
  Mr. C. J. Park, Mutley Plain.
PORTSMOUTH.—Mr. T. Brewis, 325, Fratton Rd.
PRESTON.—Mr. F. A. Williamson, Garstang Rd.

Provinces.—*Continued.*

RAWTENSTALL.—Mr. J. E. Lord, Rossendale.
REDHILL.—Mr. W. H. Fowler, 2, Station St.
ROMFORD.—Mr. J. W. Lasham, High St.
ROTHERHAM.—Mr. J. Horsfield, 1, College St.
RYDE.—Mr. H. Pollard, 168, High St.
ST. HELENS, Mr. J. G. Wallbridge, 52, Liverpool Rd.
ST. LEONARD'S-ON-SEA.—Mr. C. R. Stedman.
SCARBOROUGH.—Mr. J. Whitfield, 113, Westboro.
SHEFFIELD.—Mr. H. Antcliffe, West Bar.
  Mr. P. Carr, 85, Ecclesall Rd.
  College of Pharmacy, 116A, The Moor.
  Mr. G. T. W. Newsholme, 27, High St.
  Mr. J. B. Pater, Broomhill.
  Mr. G. Squire, 19, Haymarket.
SHREWSBURY.—Mr. W. G. Cross, 70, Mardol.
SOUTHAMPTON.—Messrs. Randall & Son.
SOUTHPORT.—Mr. Jas. Righton, 293, Lord St.
STAFFORD.—Mr. J. Averill, 10, Market Square.
STOCKPORT.—Mr. W. B. Orton, 67, St. Petersgate.
STOCKTON-ON-TEES.—Messrs. Brayshay & Son.
STOKE-ON-TRENT.—Mr. F. Adams, High St.
SUNDERLAND.—Mr. C. Ranken, Stockton Road.
TODMORDEN.--Mr. H. P. Lovatt, 6, Water Street
TOTTENHAM.—Mr. A. E. Tanner, Tottenham Ter..
TUNBRIDGE WELLS.—Mr. A. E. Hobbs.
ULVERSTON.—Mr. R. Willan, 5, Market St.
WAKEFIELD.—Mr. J. H. Chaplin, 60, Westgate.
WALSALL.—Mr. E. M. Elliott, 42, Park St.
WARRINGTON.—Mr. H. N. Ashton, 63, Sankey St.
  Mr. J. Rymer Young, 40, Sankey St.
WESTON-SUPER-MARE.—Mr. John Cooper.
WIDNES.—Mr. C. J. Bennett 32, Victoria Rd.
WIGAN.—Mr. J. Phillips, 58, Wallgate.
WINCHESTER.—Mr. A. E. Chaston, High St.
WINDSOR.—Mr. B. Westlake, 91, Peascod St.
WOLVERHAMPTON.—Mr. T. J. Gibson.
WOOLWICH.—Mr. A. J. Wing, 69, Powis St.
WORKINGTON.—Mr. J. R. Mason, 4, Pow St.

Wales.

ABERAVON.—Mr. G. B. Loveluck, High St.
BANGOR.—Mr. Owen Jones, Market Place.
FLINT.—Mr. O. William Jones, Apothecaries' Hall.
HOLYHEAD.—Mr. F. J. Jones, 12, Market Place.
MERTHYR.—Mr. E. W. Harris, 128, High St.
SWANSEA.—Mr. N. M. Grose, 8, Temple St.
WREXHAM.—Mr. C. G. Caldecott, Regent St.

Scotland.

ABERDEEN, Mr. John Cruickshank, 42, George St.
ARBROATH.—Mr. A. Naysmith, High St.
DUNDEE.—Mr. C. Kerr, 56, Nethergate.
EDINBURGH.—Mr. J. A. Forret, Brougham Place.
  Mr. C. F. Henry, 1, Brandon Terrace.
FALKIRK.—Mr. W. Forgie, 105, High St.
GLASGOW.—Mr. T. Dunlop, 181, Albert Road.
  Mr. J. A. Russell, 212, New City Rd.
  School of Pharmacy, 180, West Regent St.
  Mr. J. W. Sutherland, 127, Buchanan St.
GREENOCK.—Mr. A. McNaught, 4, W. Blackhall St.
HAWICK.—Mr. W. S. Turnbull, 2, Dovemount Pl.
KIRKCALDY.—Mr. David Storrar, 228, High St.
LEITH.—Mr. J. Bowman, 3, Duke St.
LINLITHGOW.—Mr. A. Spence, 135, High St.
MONTROSE.—Mr. A. Davidson, 172, High St.
PAISLEY.—Mr. A. Fraser, 100, High St.
PETERHEAD.—Mr. J. F. Tocher, 1, Chapel St.
STIRLING.—Mr. John Raffan, 16, Port St.

Ireland.

BELFAST.—Messrs. Grattan & Co., Ltd.
  Mr. J. B. Robinson, Duncairn Medical Hall.
  Mr. J. C. Payne, 13, Shaftesbury Sq.
CORK.—Mr. T. R. Lester, 106, St. Patrick St.
DALKEY.—Mr. G. D. Beggs, Medical Hall.
DUBLIN.—Apothecaries' Hall, 40, Mary St.
  Mr. J. I. Bernard, 26, Clare St.
LIMERICK.—Messrs. John Laird & Co.
LONDONDERRY.—Messrs. Maxwell, Greer & Co
WATERFORD.—Messrs. G. White & Sons.

IRISH NEWS.

Poisoning by Laudanum.—Commenting on the frequency of poisoning by laudanum, the Belfast *Northern Whig* says that attention has frequently been called to the present unsatisfactory condition of the law in regard to the sale of certain poisons and particularly laudanum. This drug can at present be obtained without any difficulty, and deaths by "misadventure," as the verdicts of coroners' juries invariably put it, are constantly occurring. The matter is really very serious, and ignorant persons who do not know the risk which attends the use of deadly drugs should be protected as far as possible by law. Efforts should be made to bring under the notice of Parliament, at the earliest possible moment, the present danger to human life involved in this matter. No great hardship would arise in placing laudanum in the schedule amongst the most deadly poisons, and the restriction which would then be placed on the sale of the drug would help to impress upon the public the necessity for using greater care in its use.

Mr. R. M. Lees, L.P.S.I., of Wicklow, was the recipient the other day of a well-deserved tribute of public appreciation of his courage and promptitude on an occasion calling for the exercise of both qualities. During a sea-storm which lashed the coast of Wicklow the necessity of manning the lifeboat arose to save the survivors of a sunken ship. Volunteers were slow in responding to the call for help, and Mr. Lees, with his own hands, helped to get out the lifeboat, and, though only an amateur sailor, called for a crew. His example proved contagious, and the result fully justified the hopes of the castaways. Mr. Lees is a native of Scotland, and was for some time connected with the pharmaceutical establishment of Mr. W. F. Wells, Dublin.

Mr. T. W. McMurray, L.P.S.I., late manager of the Clontarf branch of Messrs. Hamilton, Long, and Co.'s state pharmacy, Dublin, has taken over charge of the compounding department of Messrs. Williams and Co., Limited, bacon, butter, and cheesemongers, Dublin, who are now advertising "all drugs, prescriptions, and patent medicines at lowest co-operative prices."

Messrs. Frank Gill, Tom White, and H. C. Grimes, of Dublin Pharmaceutical Conference fame, have each subscribed ten guineas to the funds of the Commercial Travellers' Benevolent Institution, and have been elected life governors of that Association.

SOCIETY AND ASSOCIATION NEWS.

Blackpool and Fylde Chemists' Association.—The annual meeting of this Association was held on Tuesday, February 11. A report of the proceedings will be published next week.

Manchester Pharmaceutical Association.—At a meeting of this Association, held on Wednesday, February 12, Mr. G. S. Woolley, President, in the chair, Mr. T. H. Wardleworth delivered a lecture on "Jamaica," which was highly appreciated.

Bradford Chemists' Association.—A meeting of this Association was held on Tuesday, February 11, when Mr. Percy Lund delivered a lecture on "Nature Poets and Nature Pictures." At the conclusion of the lecture a vote of condolence with the widow and family of the late Mr. W. Martindale was passed.

Midland Pharmaceutical Association.—At a meeting held on February 6, Mr. J. Hall-Edwards delivered an address on "Some Experiences in South Africa" to an interested company which assembled at the Birmingham University. Mr. John Barclay was in the chair, and the address was amply illustrated by lantern views.

Three Towns' Junior Chemists' Association.—The first annual dinner of the members of this new Association will be held at Day's Restaurant, Devonport, on Wednesday, February 19. The chair will be taken at 8.15 p.m. by Mr. Norman Harris. Tickets may be obtained from Mr. E. Lovatt (Hon. Secretary), 17, Trafalgar Place, Stoke, Devonport.

Reading and District Chemists' Association.—A meeting of this Association was held at Reading College, on Thursday, January 30, when a paper was read by Dr. Luxmore, F.I.C., on "The Commercial Value of Scientific Training." A general discussion followed, a vote of thanks to Dr. Luxmore closing a pleasant and interesting meeting.

Chemists' Managers' and Assistants' Society.—The "Grand Bohemian Concert" arranged by the officers of this Society, in aid of the Benevolent Fund of the Pharmaceutical Society, was held at the Holborn Restaurant, on Wednesday evening, February 12, Mr. W. S. Glyn-Jones in the chair, and, judging from the number of persons present, and the fact that each programme was sold at the price of 2d., the object of the concert should be fully attained. The programme contained thirty-four items and was much enjoyed. During an interval votes of thanks were accorded to the chairman and the artistes, on the motion of the President, Mr. C. E. Pickering, and to the visitors on the motion of Mr. Cullwick.

Sheffield Chemists' Ball.—The annual ball, held under the auspices of the Sheffield Pharmaceutical and Chemical Society, was held in the ballroom at the Royal Victoria Hotel, Sheffield, on February 6. Tastefully decorated with palms and flowering plants, the ballroom had a charming appearance. The dancers numbered about 120, and amongst those present was Mr. G. T. W. Newsholme, wearing his chain of office as President of the Pharmaceutical Society of Great Britain. Music was provided by Mr. Oxley's band, and Messrs. C. F. Carr and H. Antcliffe discharged the duties of M.C.'s. The stewards were Messrs. J. Austen, P. Carr, R. Douglas, E. C. Exell, G. Squire, and J. W. J. Turner.

Royal Institution.—A general monthly meeting of the members of this Institution was held on Monday, February 3, Sir James Crichton-Browne, F.R.S., Treasurer and Vice-President, in the chair. Lord Iveagh, Mr. William Asch, the Rev. S. J. Norman, Mr. Hunter Finlay Tod, Mr. James Martin White, Mr. George Westinghouse, and Lieut.-Colonel Richard de Villamil were elected members. Receipt of Donations:—The thanks of the members were returned to Sir Frederick Bramwell, F.R.S., for his donation of £100, and to Mr. Frank McClean, F.R.S., for his donation of £50 to the Fund for the Promotion of Experimental Research at Low Temperatures. It was announced that the following valuable relics of Michael Faraday, bequeathed to the Royal Institution of Great Britain by the late Mr. Thomas J. F. Deacon, of Newcastle-on-Tyne, had been received:—Medals of silver and bronze (numbering twenty in all), and including the Fuller medal of 1828, two Copley medals of 1832 and 1838, two Newton medals of the Royal Society, 1833 and 1838, and the Rumford medal of 1846; and two foreign Orders, contained in a small mahogany box; a book of portraits and autographs, including original letters from the Prince of Wales and Prince Alfred (written in 1856), Louis Napoleon, Emperor of the French, Humphry Davy, Thomas Young, Humboldt, John Dalton, Whewell, Mary Somerville, and many others; a Daguerreotype of a consultation of Faraday with Professor Daniell; a drawing in colours of the laboratory of the Royal Institution, by a niece of Sir John Moore; and a manuscript book entitled "A Class Book for the Reception of Mental Exercises instituted July, 1818," containing contributions by Faraday. The late Mr. Deacon requested that the medals and orders should be preserved with an inscription showing that Margery Ann Reid and Caroline Deacon (*née* Reid), nieces of Faraday's wife, often lived with Faraday and his wife during the most brilliant period of his life, and are mentioned in Dr. Bence Jones's 'Life of Faraday.'

SCHOOL AND COLLEGE NEWS.

Westminster College of Chemistry and Pharmacy.—Mr. G. S. V. Wills asks us to state that all former students of the College are heartily invited to be present at a smoking concert to be held in the Crown Room, Holborn Restaurant, on St. Valentine's Day, Friday, February 14, at 8 p.m., Mr. G. T. Dobson will take the chair.

Leeds College of Pharmacy.—On Shrove Tuesday the students of the above College had the usual day off. A start was made at 10 a.m. for East Keswick, practical botany being studied on the way under the direction of the principal, Mr. F. Pilkington Sargeant, F.C.S. Pancakes were served on arrival at the celebrated "Wellington," and at 2.30 p.m. a football match took place between teams selected by Messrs. Reynolds and Taylor, Mr. Taylor's team being successful by ten goals to five. After this a hearty tea was successfully dispensed, and at six p.m. an impromptu smoking concert and whist drive were held, followed by a very exciting and enjoyable "Cake Walk." The day was generally acknowledged to be one of the most enjoyable in the annals of the College.

Football.—The match played at Wormholt Farm on Saturday, February 8, between London College and the United Amateurs resulted in a victory for the College team of 4 goals to nil.

Metropolitan College v. Muter's College.—The second match this season between these two clubs was played on Saturday last at Shepherd's Bush. Muter's won the toss, and the Metro.'s kicked off, soon beginning to assert their superiority by scoring three times to Muter's once during the initial half, and on changing ends the Metro.'s added 5 more goals, ending easy winners by 8 goals to 1.

SCOTTISH NEWS.

Pharmaceutical Conference in Edinburgh. A meeting, to which all registered chemists are invited, will be held in the House of the Pharmaceutical Society, 36, York Place, Edinburgh, on Friday forenoon next, February 21, at eleven o'clock. Mr. Peter Boa will take the chair and, at 11.15 a.m., Mr. J. F. Tocher, F.I.C., will read a paper on "The Scotch Universities and Pharmaceutical Education." At twelve o'clock there will be an adjournment for luncheon, which will be followed at one p.m. by a conference on pharmaceutical education in Scotland and the Carnegie Trust.

The Annual Social Reunion of the employees of Messrs. Duncan, Flockhart and Co., Edinburgh, took place in the Free Gardners' Institute, Picardy Place, on Friday, February 7. Two hundred and forty employees and friends took part in the proceedings. Prominent amongst those present were Mr. J. L. Ewing and Mrs. Ewing, Mr. R. G. Guyer and Mrs. Guyer, and Mr. G. Murray. An excellent programme of songs and recitations commenced the proceedings, at the conclusion of which refreshments were served in the large saloon. A dance followed, in which over eighty couples took part, and was continued until the small hours of the morning. The whole arrangements were ably carried through by Mr. Barrett, assisted by a committee.

PERSONALITIES, BUSINESS CHANGES, ETC.

Notices of business changes, etc., should be sent by Divisional Secretaries or the persons interested, and will then be inserted free.

Mr. E. C. Spurge, B.Sc., and Mr. John Evans passed the Final A.I.C. examination, and not the Intermediate, as stated last week.

Bro. S. Baker, of Chichester, was advanced to the Senior Warden's chair of the Lodge of Union, No. 38, Chichester, on February 6.

Dr. W. N. Houghton, son of Mr. R. W. Houghton, Ph.C., has been appointed by the Colonial Office a medical officer in the Concentration Camps, South Africa.

Mr. G. T. W. Newsholme, President of the Pharmaceutical Society, was one of the guests at the annual dinner of the Society of Public Analysts, held in London on Wednesday, February 12.

Messrs. Brooke, Simpson, and Spiller, Limited, Atlas Works, Hackney Wick, London, N.E., intimate that Mr. Samuel Charles Welch has been appointed general manager of the company, and Mr. William Selby Simpson works manager and chief chemist. The company's city offices will in future be at 9 and 10, Jewry Street, Mark Lane, E.C.

Councillor A. E. Ekins, pharmaceutical chemist, and Mayor of St. Albans, on Thursday, February 6, entertained some thirteen hundred members of the Courts and Lodges of the Friendly Societies in St. Albans, the object being to give an impetus to the great work of the united Friendly Societies of the city. During the evening the Dean of St. Albans handed to the Mayoress a handsome gold brooch, set with diamonds and rubies, and inscribed as follows:—"Presented to the Mayoress of St. Albans, Mrs. A. E. Ekins, by the Friendly Societies of the City, February 6, 1902." Subsequently, Brother Sidney A. Campkin, P.G.M. of Cambridge, addressed the gathering on "The Work of Oddfellowship."

Mr. J. E. Lord, of Rawtenstall, gave a demonstration of the method of measuring the size of minute objects, and of measuring the power of a microscope with different eye-pieces and objectives, before the Rossendale Natural History Society, on Tuesday, February 4. He showed and described the various contrivances used in miscroscopic measurements, and then gave a demonstration of what to do, showing step by step the whole *modus operandi*. It has been arranged that Mr. Lord shall give another address to the members on some recent improvements of the microscope, with a demonstration of what a modern, high-power, apochromatic, homogeneous immersion objective can accomplish with extremely minute objects.

Mr. John Thistlewood Davenport, of 13, Eaton Gardens, Hove, and of 33, Great Russell Street, chemist, who died on December 29 last, aged eighty-four years, left personal estate of the net value of £109,062 14s. 5d., and the gross value of the whole of his estate is £113,515 10s. 10d. He bequeathed the goodwill and stock-in-trade of his business, excepting the business in chlorodyne and his interest in the premises Nos. 33 and 34, Great Russell Street, to his son Horace, and by an agreement made on January 15, 1857, between the testator and the late John Collis Browne, joint proprietors of chlorodyne, it was provided that the recipe for chlorodyne should be known to three persons only, one of whom should be the manufacturing agent, and the other two nominees of the Browne and Davenport interests respectively.

COMPANY INTELLIGENCE.

The Sanitas Company, Limited.—The directors of this company have resolved to recommend the payment of a final dividend of 4½ per cent. and a bonus of ½ per cent., making, with the interim dividend already paid, a total distribution for the year ended December 31, 1901, of 7½ per cent. per annum. £500 is carried to depreciation account, £1,500 to reserve, and £2,167 2s. 2d. forward to 1902.

Bovril, Limited.—The report of the directors of Bovril, Limited, for 1901, to be submitted to the meeting on February 14 shows that the net profit amounts to £157,672 and the balance from last account is £14,182, making £171,854. On June 30 last the directors paid the debenture interest of 4½ per cent. per annum, amounting to £11,250; on December 31 they issued warrants for the balance of debenture interest, amounting to £11,250; on August 31 they paid the interim dividend on preference shares of 5½ per cent. per annum, amounting to £13,750; and on August 31 they also paid the interim dividend on ordinary shares of 7 per cent. per annum, amounting to £26,250. The directors now propose to pay the balance dividend of 5½ per cent. per annum on the preference shares, £13,750, and also the balance dividend of 7 per cent. per annum on the ordinary shares, amounting to £26,250. They further recommend a dividend of 4 per cent. per annum on the deferred shares, which will absorb £30,000, leaving a sum to be carried to reserve of £25,000 and an amount to be carried forward of £14,354. The financial position of the company has been improved by the increase of the reserve fund, which will now amount to £95,000, and the directors recommend a dividend of 4 per cent. on the deferred shares, as against 3½ per cent. last year.

MARKET REPORT.

LONDON, THURSDAY, FEBRUARY 13, 1902.

Business in Drugs and Chemicals, as also unfortunately in general, if not perhaps as quiet, as was the case earlier in the year, can by no means be described as being anything like active. As a matter of fact, some orders have been placed, but only just enough to make the recipients, like Oliver Twist, if not ask, at least wish, for more. There is, also, a growing feeling that we have practically seen the worst as to the fall in prices, while at the same time, although the wish is perhaps the father to the thought, the hope is gaining ground that the deplorable struggle in South Africa is at last approaching its final close. The making known of the reciprocal treaty which has lately been concluded with Japan, and which appears to meet with general approval, has also helped matters to a certain extent. We give below some prices, which may be of interest to our readers.

ACID CARBOLIC—Is firm at 6½d. to 6¾d. per lb. for the 34-35° ice crystal in bulk packing, and at 8¼d. to 8½d. per lb. for the 39-40° B.P. quality in detached crystals; liquid, 95 to 98 per cent., of pale straw colour, 1s. to 1s. 2d. per gallon, according to quantity, in 40 gallon casks.

ACID CITRIC—Is quiet and unchanged at 1s. 0¾d. to 1s. 1d. per lb., according to quantity and make, for crystals in 5 cwt. casks.

ALUM.—Lump £5 10s. to £5 12s. 6d., and ground £6.

ASHES.—Pots 26s. 6d., pearls 40s.

BENZOLE—Dull. 50 per cent. prompt 8½d. to 9d., 90 per cent. 10d.

BICHROMATE OF POTASH.—3d.

BICHROMATE OF SODA.—2¼d.

BISMUTH SALTS—Are still quoted 5s. 5d. per lb. for the subnitrate B.P., and 6s. 1d. per lb. for the Carbonate B.P.

BORAX AND ACID BORACIC—Are quiet and unchanged.

BROMIDES—Are firm, at unchanged prices.

CAMPHOR.—Business to the extent of 400 piculs Japan Crude has been done for Feb.-March shipment at 151s. to 150s. c.f. and i., but offers are now withdrawn. Refined: English is steady at unchanged price.

CINCHONA BARK.—At these auctions on Tuesday last, the second of the series, continued small supplies were catalogued, the total of all descriptions amounting to 1,399 bales, as compared with 954 packages at the opening sale in January and 1,262 packages at the corresponding sale last year. There was a good steady demand, and the catalogues have been practically cleared at and since the auctions, at fully previous auction rates, viz., at an average unit of 1½d.; this compares with 1½d. at the February sale a year ago. East Indian: 552 bales offered and 532 bales sold, according to analysis, Succirubra, stem chips and shavings at 2⅝d. to 3⅞d., branch at 2¾d., and root at 3d. to 3½d. Officinalis, stem chips ordinary to good at 3⅝d. to 6d., ordinary to fair shavings at 3¾d. to 4¾d., branch and twigs from 2⅝d. to 4⅞d.; renewed stem chips and shavings, good rich at 6⅜d. to 7½d. Ledger, good root at 7⅜d. to 7½d. Ceylon: 168 bales offered and sold. Red, stem chips and shavings, fair to good at 3⅝d. to 5⅛d., good broken quilly chips at 9⅛d. Officinalis, stem chips and shavings at 3¾d. to 3⅞d. Ledger, natural stem chips and shavings at 5¾d. to 7¼d., renewed ditto at 6⅜d. Java: 107 packages offered and 30 sold. Ledger stem chips at 11⅝d. to 11¾d., Ledger stem and branch at 10d., Ledger branch at 9d., and Succirubra root at 4d. to 6½d. Calisaya.—572 bales Bolivian cultivated offered and sold, quill at 6d. to 10d., broken at 4½d. to 7d.

COD LIVER OIL.—Market for new oil has not yet really opened; prices remain nominally 75s. to 80s. per barrel for best new non-congealing Norwegian Oil, in usual tin-lined barrels.

ESSENTIAL OILS.—There has been little movement in peppermint this week, but prices are steady and unchanged. American HGH quoted 9s. to 9s. 3d., H&P 8s. to 8s. 3d., JBH first premium 7s. 9d., and JBH pure 7s. 3d. Japan dementholised dull at 4s. for Kobayashi. Star aniseed, following the forced sales of the previous week, has been firmer, and a fair business has again been done on the spot at 4s. 3d. to 4s. 4d. Cassia slow of sale at 2s. 6d. to 2s. 11d., according to analysis. Citronelle continues very quiet at 9½d. for drums and 10d. for tins. Lemongrass remains steady, but quiet, with small sales at 7½d.

GLYCERIN.—While prices are so far unchanged at 63s. 6d. to 65s. per cwt. for best water white, double-distilled, chemically pure 1·260 s.g. quality in tins and cases, the possibility, if not probability, of an advance in price ere long is being freely discussed. In face of an advance in price of crude, an advance in price of the refined article would appear justifiable.

HYPOPHOSPHITES.—So far the threatened struggle between the makers has not had the serious effect on prices which was at first anticipated. Foreign makes are, however, being offered at 2s. 6d. per lb. for the Soda and Lime Salts, without, however, finding any very active response on part of buyers, who prefer a really reliable article.

IODIDES.—The combined makers still quote on basis of 8s. 9d. per lb. for Potassi Iodid.

LITHIA SALTS—Are unchanged at 5s. 11d. per lb. for the carbonate in 2 cwt. lots.

MENTHOL.—Market is weaker, and Kobayashi brand can be bought at 13s. 9d. to 14s. per lb., according to quantity.

MERCURIALS—Are steady and without change in price.

MORPHINE—Is very quiet at 4s. 5d. to 4s. 7d. per oz., according to quantity, etc., for the Hydrochlorate powder, and at 2d. per oz. more for the crystalline salt.

NITRATE OF SODA.—On the spot refined £10 7s. 6d., ordinary £10 5s.

OILS (FIXED) AND SPIRITS.—Linseed Oil strong and fully 10s. dearer; London, spot, pipes, £30 15s. to £31; barrels, £31 paid, month £31, March-April £31, May-August £30 15s. to £31, September-December £29 10s.; Hull, spot, naked, £29 15s., February-April £29 10s., May-August £29 10s., September-December £28 10s. Rape Oil firm and advancing; ordinary brown, on the spot, barrels, £27, February-April £27 5s.; English, refined, spot, £28 10s.; Ravison, naked, spot, £24 15s., February-April £24 15s.; Jamba, spot, £26 paid. Cotton Oil very firm; London, crude, spot, £22 15s., February-April £23; refined, spot, £24 10s. to £25 10s.; Hull, naked, refined, spot, £22 12s. 6d., February-April £22 15s., May-August £23 5s.; crude, spot, £21 5s., February-April £21 7s. 6d., May-August £22. Olive Oil: Mogador, £34; Spanish, £35 to £38, as to quality; Levant, £34 to £35. Cocoanut Oil: Ceylon, spot, £33 10s., March-April £32 5s. c.i.f., March-May £31 5s. c.i.f.; Cochin, spot, £37, March-April £33 10s. c.i.f., March-May £33 5s c.i.f. Palm Oil: Lagos, on the spot, £27 10s. Lubricating Oil: Pale American, spot, 6s. to 9s.; black, 5s. to 6s.; Russian, black, 5s. to 6s. 6d., pale 7s. to 10s. Turpentine firm; American, spot, 30s. 3d. to 30s. 4½d., March-April 30s. 6d., May-August 30s. 10½d., September-December 31s. to 31s. 1½d. Petroleum Oil firm; Russian, spot, quoted 6⅜d. to 6½d.; American, spot, 6⅞d. to 7d.; water white, 7½d. to 8d.; refined Roumanian, on spot, 6⅛d. Petroleum Spirit: American, ordinary 8d.; deodorised 8¼d.

PARAFFIN WAX.—Crude 1⅞d. to 2d. Refined 3½d. to 3¾d.

PHENACETIN—Is dull and weak at 4s. 3d. to 4s. 9d. per lb., according to quantity for both crystals and powder, from the combined makers, while less desirable makes are being offered at rather less money.

PRUSSIATE OF POTASH.—English makes 5⅜d. to 5½d. Beckton 5¼d.

QUICKSILVER—Is steady at £8 15s. per bottle from the importer.

QUININE.—While maker's price remains unchanged at 1s. 2d. per oz. for the sulphate for 1,000 oz. lots in 100 oz. tins, the speculative market has hardened somewhat, and 1s. 1⅞d. per oz. has been paid for B&S and/or Brunswick sulphate for June delivery. The landings during January were 37,568 ozs., and the deliveries 51,888 ozs., making the stock on January 31, 3,542,672 ozs., against 3,302,520 in 1901.

SALICYLATES AND SALOL—Are dull and weak in consequence of the unreasonable competition amongst the various foreign makers. Buyers will do well to confine their purchases to the best and well-known makers, such as Scherings, who, we understand, are meeting all and any competition.

SOY—Remains steady, although quiet, at 1s. 6d., duty paid.

SULPHATE OF AMMONIA.—Dull. Grey 24 per cent. London prompt £11 7s. 6d. to £11 10s. Hull prompt £11 7s. 6d. Leith prompt £11 8s. 9d. Beckton Feb.-June £11 10s. Beckton terms prompt £11 7s. 6d.

SULPHONAL—Is unchanged at 5s. per lb. for both crystals and powder, for quantity and in bulk packing.

TAR.—Stockholm 23s. to 23s. 6d. Archangel 17s.

THYMOL—Appears to be on the down grade, especially for later delivery. For spot, 8s. 9d. to 9s. 3d. per lb. is quoted, according to make and quantity.

Bank-rate is now 3 per cent.

DISSOLVED HAEMOGLOBIN . . CAPSULOIDS

THE LANCET of August 11th, 1899, says:—

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Pharmaceutical Journal

SPECIAL ISSUE,

FEBRUARY 22, 1902.

THE latest date for receiving Displayed Advertisements is

Tuesday Next, the 18th inst.

All communications should be addressed to

THE PUBLISHERS,
8, Serle Street,
Lincoln's Inn,
LONDON, W.C.

February 15, 1902.

DIARY OF THE WEEK.

Tuesday, February 18.

Royal Institution, Albemarle Street, Picadilly, W., at 3 p.m.—"The Cell: Its Means of Offence and Defence. Immunity (Lecture VI.)." By Dr. Allan Macfadyen.

Wednesday, February 19.

Chemical Society, Burlington House, Piccadilly, W., at 5.30 p.m.—Ordinary Meeting.

Chemists' and Druggists' Society (Ireland), 10, Garfield Chambers, Royal Avenue, Belfast, at 8 p.m.—Annual Business Meeting.

Royal Microscopical Society, 20, Hanover Square, London, W., at 8 p.m.—"Polarising with the Microscope," by E M. Nelson.

Three Towns Junior Chemists' Association, Day's Restaurant, Devonport, at 8.15 p.m.—Annual Dinner.

Western Chemists' Association (of London), Westbourne Restaurant, 1, Craven Road, W., at 9 p.m.—Usual Monthly Meeting.

Young Chemists' Association, Working Men's Club, Gallowgate, Newcastle-on-Tyne, at 8.15 p.m.—Meeting to draw up fixed rules.

Thursday, February 20.

Chemists' Assistants' Association, 73, Newman Street, London, W., at 8.30 p.m.—Musical and Social Evening.

Linnean Society of London, Burlington House, Piccadilly, W., at 8 p.m.—The following papers will be read: "On some Gasteropoda (*Limnotrochus*, *Chitra*) from Lake Tanganyika, with the description of a new genus," and "On the Nyassa Vivipara and its Relationship to *Neothauma*," by Miss L. Digby; "On the Fruit of *Melocanna bambusoides*, an Exalbuminous Grass," by Dr. O. Stapf; "On a West Indian Sea Anemone, *Bunodeopsis globulifera*," by Dr. J. E. Duerden.

Friday, February 21.

Hastings and St. Leonards Pharmaceutical Association, Castle Hotel. Address by W. S. Glyn-Jones. Members of the Eastbourne Chemists' Association are invited to be present.

Pharmaceutical Society of Great Britain (North British Branch), Meeting at 36, York Place, Edinburgh, at 11 a.m.—"The Scotch Universities and Pharmaceutical Education," by J. F. Tocher.

Royal Institution, Albemarle Street, Piccadilly, W., at 9 p.m.—"Musical and Talking Electric Arcs," by W. Duddell.

Saturday, February 22.

Inter-Pharmacy Football League.—Square *v.* London College.

Metropolitan F. C. *v.* Kensington Rangers.

Royal Institution, Albemarle Street, Piccadilly, W., at 3 p.m.—"Some Electrical Developments (Lecture II.)," by Lord Rayleigh.

BIRTH.

Fearnley.—On January 29, 1902, at 124, Spencer Place, Leeds, the wife of Fairfax Fearnley, M.P.S., of a son.

LONDON GAZETTE NOTICES.

PARTNERSHIP DISSOLVED.

Arthur Cecil Gask and Ludlow Strangways, dental surgeons, Paignton. Debts will be received and paid by A. C. Gask.

RECEIVING ORDER IN BANKRUPTCY.

Reginald Betts, chemist and druggist, whose present address is said to be unknown, but who was lately carrying on business at Market Hill, Framlingham.

Notices to Correspondents.

All Communications for the 'Pharmaceutical Journal' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street, Lincoln's Inn, London.

Contributions sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Antcliffe, Baker, Black, Craven, Crinon, Dallinger, Davies, Dixon, Forret, Forshaw, Harrington, Harrison, Hebb, Hoit, Javal, Jones, Liveing, Lord, Lucas, Mason, Morgan, Mumford, Nelson, Parry, Pickering, Powell, Rankin, Sankey, Sargeant, Short, Sibley, Smith, Stedman, Thomas, Usher, Warner, Welch, Wills, Worfolk.

Pharmaceutical Journal.

A Weekly Record of Pharmacy and Allied Sciences.

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LONDON: SATURDAY, FEBRUARY 15, 1902.

ANNOTATIONS.

The Council Meeting on Wednesday afforded the members an opportunity, of which they were not slow to take advantage, to express the very sincere regret they all felt at the sad loss experienced by the death of their late colleague—William Martindale. The President, who first spoke on the subject, referred at length to Mr. Martindale's enthusiasm for work, and summed up the situation admirably in his statement that Mr. Martindale was a victim to his acute sense of duty. No one ever realised more fully than William Martindale how much every man is a debtor to his profession and, on the other hand, no profession ever had a more enthusiastic member than he. The motion that a suitable resolution (see p. 124) should be adopted by the Council was seconded by the Vice-President, Mr. C. B. Allen, who was happily inspired in his references to the deceased pharmacist, while several other members of Council also spoke in appreciative terms of their departed colleague, whose memory is never likely to fade so long as the profession of pharmacy persists. The vacancy caused by Mr. Martindale's death was not filled at this meeting of the Council, the general feeling of the members being that the appointment should be deferred until the next meeting. Whoever may then be co-opted by the Council will, in the ordinary course, complete Mr. Martindale's interrupted term of office, terminating in 1904. The seven members of the Council whose terms are now approaching completion are Messrs. Carteighe, Glyn-Jones, Harrington, Harrison, Park, Southall, and Young, all of whom, of course, are eligible for re-election.

The Board of Examiners for England and Wales has discussed the proposal to reduce the number of occasions on which it meets during the year to conduct the Minor and Major examinations of the Pharmaceutical Society, and a report on that subject, among others, was presented at the meeting of the Council (see p. 128) on Wednesday. On reference to the report it will be seen that the examiners are of opinion that the Major Examination might, with advantage, be held in April and October only, but they do not consider it desirable to hold the Minor Examination on less than four occasions during the year. As the report in question was adopted by the Council, it may be assumed that the recommendations of the examiners will be acted upon, the Major Examination being held twice a year only, and the Minor every three months, as at present. There are doubtless good reasons both for and against the latter arrangement, but the matter has been very fully considered, and it may, therefore, be taken for granted that the balance of advantage appears to be in favour of continuing on the present lines.

The Sale of Scheduled Poisons, being largely restricted to registered chemists, should not be surrounded by unnecessary restrictions by those to whom the Legislature has entrusted that particular branch of business. But some chemists, to avoid worry, refuse to have anything to do with certain articles which contain scheduled poisons, and so they cause needless trouble to members of the community who are compelled to make use of those articles. It is easy enough to say the sale of a certain poisonous preparation is not worth the trouble involved, and, therefore, to refuse to sell it, but the public convenience ought to be considered in this, as in all other, ways. If no one but a registered chemist may sell a certain weed-killer, for example, it is a fatuous policy which leads any chemist to refuse to stock and sell that particular weed-killer, even though he may have a conscientious objection to supplying such preparations. For if customers demand the article, and its use is not contrary to public policy, it is mere dog-in-the-manger contrariness for the legally authorised vendor to refuse to meet the demand. The sale of the preparation may involve trouble and its supply may appear unprofessional, but the mere fact that a registered chemist alone may legally sell it should suffice to ensure the supply of the weed-killer under proper conditions. Moreover the seller ought to be properly informed regarding the properties and uses of the preparation.

The Foregoing Remarks are suggested by a complaint made by a correspondent of the *Gardener's Chronicle*, whose letter on the sale of "horticultural poisons" appears in a recent issue of that weekly organ. Taking certain well-known fumigating materials as a popular example, he cites his own case as illustrating the inconvenience, and even damage, involved. For years he has been in the habit of getting a supply from a well-known horticultural firm in London Wall, but on the last occasion when he went there he was informed that they were debarred from selling, and could give him no information as to how he could obtain it. Searching the advertising columns, where it used to be stated that the articles were obtainable anywhere, he found that even those advertisements were suspended, and finally, after some days' delay, during which his floral foes were getting well ahead, and laying their new season's eggs, which he aimed at preventing by their annihilation in time, he found the manufacturer's address, and made his way to Southwark. Even there, however, what he terms the "ridiculous law" blocked him, and all he could do was to get the address of a City chemist, who was apparently the sole agent. That involved another journey, which resulted in his getting what he wanted with a considerable expenditure of time and trouble, and a delay which led to the subsequent detriment of his plants by the advent of a fresh generation of foes.

Furthermore, He Adds, the chemist "naturally" was absolutely devoid of practical experience as regarded the application of the remedy, while at his previous source of supply he had only to ask to obtain reliable advice, since the tradesmen were both nurserymen and salesmen. Hence he could not but feel that any such invasion of a qualified trade by an utterly unqualified one was not merely an anomaly, but a great wrong, both to the rightful trade itself, and its legitimate customers, who very often required skilled advice as well as the materials with which to carry it out. What, he asks, would the Pharmaceutical Society think if the horticultural trade claimed and obtained a monopoly of all vegetable ingredients, and the right to dispense them, without the ability to specify their particular uses and modes of application? Many garden plants, too, are very poisonous, and far more fatalities have occurred by their accidental misuse than can be laid to the charge of horticultural remedies. "Why, then, does not the Pharmaceutical Society step in and claim the right of sale of all such plants, and keep a register to be signed by the purchasers?" It is recognised by the writer that his suggestions are ridiculous on the face of them, but he urges that they are not more so than the unjustifiable attempt of one trade to draw a hard-and-fast frontier line "which is clearly a long way within the boundaries of another, to the hindrance of business and the detriment of the customer, to say nothing of the vested interests of the inventors and proprietors of extremely valuable articles, whose interests must have suffered severely by the trade being suspended for so long in mid-air, like Mahomet's coffin, while the nurserymen and pharmaceutists fight out the battle." The moral is obvious. So long as registered chemists are the only persons legally recognised as sellers of certain poisons, they should not interpose any unreasonable difficulty in the way of obtaining poisonous preparations, and they ought also to take such steps as may be necessary to make themselves fully conversant with all that it is requisite they should know concerning the articles they sell.

A Medical Practitioner has asked the editor of the *Lancet* a question as to his position, which is probably that of hundreds of others, in regard to the supply to his patients of medicines containing poison. For twenty odd years he has been in general practice and has dispensed his own medicine, either personally or through an assistant, who was not always qualified. Of course, he says, numbers of such bottles of medicine have contained scheduled poisons, but he has never used a label containing his name and address, as he has always thought, and continues to think, that the addition of a name and address to the directions for taking medicine savours of advertisement. With hundreds of others he uses the ordinary surgeons' slip label, as it is called, but if the General Medical Council insists upon his advertising his name and address he must bow to its decision and do so. He adds that the further question of keeping a book falls in with the usual custom of keeping a copy of the prescription for future reference and not necessarily for registering the sale of a poison. As a matter of fact, he resents the idea of "selling medicine" altogether, as he does not charge his patients for medicine, but charges them for treatment only. He does not, however, explain in his letter what course he pursues in cases where the medicine is simply repeated, without further attendance upon the patient; neither has he convinced the editor of the *Lancet* of the soundness of his arguments.

The View Taken by the *Lancet* is that, according to Section 17 of the Pharmacy Act of 1868, medical men who dispense their own medicines containing scheduled poisons are, if they obey the strict letter of the law, compelled to label whatever vessels contain the medicines in question with their names and addresses. If that reading be correct a new difficulty arises for medical men dispensing scheduled poisons, as the correspondent already mentioned points out, since the practitioner seems to be torn between the appearance of self-advertisement and a breach of the law. Medical practitioners are not exempted from the necessity of distinctly labelling medicine containing poison with their name and address, while the ingredients thereof must be entered with the name of the person to whom the medicine is sold or delivered, in a book to be kept for that purpose. The second part of this provision is probably answered by the practice of entering prescriptions in a book against the name of the patient for whom the medicine was prescribed, but medical men object to their name and address appearing upon labels because it seems to them to savour of advertisement and, in a way, to level the position of the medical man who dispenses his own medicine to that of the druggist in his shop. If the law did not happen to require such a step, would it not, asks the *Lancet*, be exactly the kind of thing to which the General Medical Council, sensitive of the dignity and propriety of the profession, would make vigorous objection? As a matter of fact, such a practice is not only distasteful to the general medical practitioner, but neither the General Medical Council nor any other body has yet found fault with a practitioner for ignoring the provision of the law to which objection is taken, and the *Lancet* doubts very much whether such a contingency will arise.

The Poisons Committee appointed by the Privy Council met on Thursday, February 6, Sir Herbert Maxwell, M.P., in the chair, but no business was transacted. The death of Mr. William Martindale having been announced, the Committee at once adjourned, and is not expected to meet again until next month. As a result of the adjournment, the evidence of the Secretary and Assistant-Secretary of the Pharmaceutical Society was deferred, as well as that of several other witnesses. According to the *Glasgow Herald*, Dr. W. L. Mure, of Glasgow, and Dr. Voelcker were to have been examined by the Committee last week. In the same paragraph occurs a noteworthy example of the way in which facts are so frequently distorted by newspaper writers, the Pharmaceutical Society being falsely credited by the *Herald* with having initiated the recent prosecution at Leeds, as the result of which a conviction was obtained by the local authorities against a general dealer who had sold some emerald green. The Society had nothing whatever to do with that case, either directly or indirectly.

The Chemical Committee of the Royal Agricultural Society is of opinion that it would be reasonable if any vendor of what for convenience might be called "agricultural and horticultural poisons" should be allowed to do so, provided he sold the article in the condition in which he received it from the manufacturers, the packet, bottle, or other receptacle being kept intact and unopened, and marked outside with an indication of its contents, and of the poisonous nature of the substance. The Society has been invited to give evidence before the Poisons Committee, and Mr. Bowen-Jones, who is to attend and give evidence on lines approved by the Council of the Society, explained his views at a recent meeting of that body. He is of opinion that the specific articles to be included in the proposed third part of the Poisons Schedule should be clearly stated therein, while in the case of the more virulently poisonous of such preparations, the same precautions as defined in Section 17 of the Pharmacy Act of 1868 might be prescribed. Otherwise, however, he thinks there should be no restrictions or monopoly in the sale of poisonous substances used in agricultural or horticultural operations.

THE USE OF SPECIAL BOTTLES for poisonous liniments and similar preparations ought to be general if the Pharmaceutical Society's poison regulations are to be fully effective, but the case reported at page 134 shows that such adoption of precautions which are necessary in the public interest is not yet universal. Writing to a Halifax newspaper, the President of the local pharmaceutical association, a letter from whom also appears at page 129 of this week's Journal, points out that accidents of the kind reported are far too common, and asks how they can be prevented. He does not attempt to answer his own question, but suggests that if doctors' surgeries were placed on the same footing in regard to poison regulations as chemists' shops, the risk of accidents would be much lessened. The poisonous liniment of aconite and belladonna was supplied by the medical man in a bottle like an ordinary medicine bottle. That, as Mr. Dixon points out, would be illegal for a chemist, and he asks why it should not be so for a doctor. In the interests of public safety he maintains that the medical profession all over the country should observe this Privy Council order of January 31, 1899, even though it is not legally binding upon them, as it is upon chemists. In conclusion, he states that he can enumerate dozens of instances in which doctors have sent to their patients two bottles, the same in shape and size, one containing medicine and the other lotion or liniment, with great risk of disastrous results. Such a state of affairs should certainly not be allowed to continue.

THE PROPRIETARY ARTICLES TRADE was the subject of some sensible remarks by Mr. A. J. Giles, the Secretary of the Grocers' Federation, at the annual dinner of the Sheffield and District Grocers' Association, held last week. He pointed out that the Federation had a great educational work to do, and he suggested that it should teach that the business of a grocer was to be a grocer, and not an automatic machine; that he should be a man who knew his business, and who did not require to have his goods put up into packets, the value of which he might, or might not, know. When every grocer who dealt in proprietary articles had a knowledge of their contents and value, he thought there would be an end to the foisting of cheap rubbish on unsuspecting tradesmen, who did not know the value of the goods they were buying and selling, and they would only distribute those goods which possessed real value. Every commercial man preferred to call upon a grocer who knew his business, and when that time came the representative of a tea firm would not find that his tea was to be put in competition with tea which had to be sold with a rolled-gold watch. Mr. Giles also prophesied that the time would come when a grocer would say about every article, "I have bought it, I have paid for it, and I am not going to sign any agreement as to the price at which I shall sell it." He said he believed that if such educational work was carried on by local associations, as well as by the Federation, there would be reared a class of grocers which was greatly needed to-day. If this country was to maintain its commercial supremacy, it would be because the traders of the country had been well trained and educated themselves, since because brains counted above everything.

DRUG-TAKING was again on Monday last the subject of an article in the *Daily Mail*, containing statements of a startling nature as to improper use of drugs and the alleged practice of modern men and women carrying "little silver bonbonnières or embroidered bags" containing innocent-looking white tabloids which they declare entirely do away with the want of sleep. Then follows a description of the effects of morphine and cocaine injections, without a constant use of which the devotees of society life are said to be unable to get through their day, etc., etc. But then it is added this artificial stimulation is but temporary—as the ultimate result in the case of morphine "the brain softens and the man or woman becomes imbecile" or in the case of cocaine "it deteriorates the moral system and the regular cocaine taker becomes incapable of telling the truth." A correspondent of the *D.M.*, writing from Oxford under the signature of "Clericus," adds to the horror of the tale by stating that "nine chemists out of every ten will tell purchasers of sleep-producing drugs, as sulphonal and trional, that they are 'harmless.'" Then, as comment on that statement, he adds that he has just had to place in a lunatic asylum one whose brain trouble was caused solely by the constant use of those drugs, and finally, he adds that surely the law as to the sale of such drugs should be amended. Unless these statements are vitiated by the influence of cocaine-taking, the reflection they appear to cast upon chemists is deserving of attention and is too serious to be ignored.

THEODOR PECKOLT, practising as a pharmacist in Rio Janeiro since 1847, will celebrate his eightieth birthday on July 13 next, and some friendly admirers of the zeal he has shown in the prosecution of scientific work in connection with the medicinal and economic plants of Brazil, have issued a circular proposing to present him, on the occasion above-mentioned, with an album containing portraits of his colleagues in Europe and an address of congratulation. The circular is signed by Director Greshoff, of Haarlem; Professors Hartwich, Zurich; Schär, Strassburg; Thoms, Berlin; Tschirch, Bern; and V. Vogl, Vienna. They suggest that those desirous of taking part in this presentation should forward to Professor Tschirch, of Bern, before March 15, a photograph, with name of sender written on a strip of white paper, together with a minimum contribution of five shillings towards the cost of providing a suitable album.

WEIGHT CHARTS are of increasing importance in medical practice, and a particularly useful form of chart, which has been designed by a member of the Pharmaceutical Society—Mr. H. D. Kelf, of East Dulwich, ought to be received with considerable favour. The weight of patients, especially children and adults suffering from phthisis, is an important factor in the diagnosis and treatment of disease, and should always be recorded. These charts are used in a similar manner to "temperature charts," the weight being recorded by the nurse each week, so that the gain or loss in weight of the patient can be seen at a glance by the medical attendant. The charts should also prove very useful to chemists, especially in health resorts, such as Bournemouth, Torquay, Ventnor, etc. In those towns hundreds of invalids and persons residing there on the advice of their physician, are weighed weekly by chemists, and the report of their condition is always wanted. Mr. Kelf has prepared three distinct charts, No. 1 chart showing the difference in weight, by half pounds, up to three stones, No. 2 from three to nine stones, and No. 3 from nine to fourteen stones. They are published by Messrs. Maw, Son, and Sons, London, who will gladly send specimen copies and prices on application.

SEVERAL REPORTS OF ASSOCIATION MEETINGS having been received this week just as the Journal is going to press, the Editor wishes to intimate that it is only when special arrangements have been made in advance that reports received on Thursdays can be published in full, if at all, the same week. He also desires to point out to secretaries of local associations that, except in cases where meetings are held on Wednesdays, it is obviously desirable that reports should be received by him on Wednesday morning at latest, and earlier in the week if possible.

THE LORD PRESIDENT OF THE PRIVY COUNCIL has appointed Mr. Walter Hills to be a Member of the Committee to consider Schedule A, annexed to the Pharmacy Act, 1868, in the place of Mr. William Martindale, deceased.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

Liniment of Soap.

At the North London Police Court, on February 7, the adjourned hearing of the case against Mr. Ralph Hall, 552, Kingsland Road, N., came before Mr. Mead. It will be remembered (*vide P.J.*, December 21, p. 696) that on December 12 last the defendant was summoned by the Hackney Borough Council for selling liniment of soap which the public analyst (Mr. Leo Taylor) alleged contained methylated spirit, and that the case was adjourned for the Somerset House analysts to report on the reserve sample. The Clerk said that the report had been received from Somerset House, and that the Government analysts found that the sample did not contain methylated spirit. Mr. Williams (who appeared for the Borough Council) said that in the face of that report he wished to withdraw the summons, and by arrangement with the defendant's solicitor (Mr. C. H. Kirby, solicitor to the C.D.A.) they would pay £5 towards the defendant's costs. The magistrate signified his acquiescence, and the summons was withdrawn.

Liniment of Soap.

At the North London Police Court, on February 7, before Mr. Mead, Mr. R. Tice, 4, Dalston Lane, N.E., appeared on an adjourned summons, charged by the Hackney Borough Council with selling liniment of soap which contained methylated spirit. At the previous hearing on December 12 Mr. Tice disputed the certificate of the public analyst (Mr. Leo Taylor), stating that he bought the liniment as B.P. from a wholesale house, and requested that the reserve sample should be sent to the Government Laboratory for an opinion thereon. The Clerk intimated that the Somerset House analysts had reported that, in their opinion, the sample did not contain methylated spirit. Mr. Williams, solicitor for the Council, asked leave to withdraw the summons. Mr. Tice asked for costs, stating that upon his two appearances at that Court he had had to close his shop, as he had no assistant. The magistrate allowed him 21s. previously paid for the Somerset House analysis, and 20s. personal costs.

Spirit of Nitrous Ether

At Coventry Divisional Sessions on February 7, Mary Hull, grocer, Withybrook, was charged with selling spirit of nitre which was deficient in strength. Mr. Salmon stated that he saw a bottle labelled spirit of nitre exhibited in defendant's shop window, and purchased four ounces, for which he paid a shilling. When analysed, the spirit was found to be deficient in ethyl nitrite to the extent of 95 per cent. Mr. Maddocks, who appeared for the defendant stated that the spirit had been in defendant's possession for four years, and had been kept in a corked bottle in the shop window. A fine of 2s. 6d., with 15s. 6d. costs, was imposed.

POISONING CASES AND INQUESTS.

Chlorodyne.—At Birmingham, on February 3, the death of Alfred Pearson (58), hairdresser, 174, Great Lister Street, from chlorodyne poisoning, was the subject of an inquiry by the City Coroner, Mr. I. Bradley. Deceased had been addicted to drinking, and appeared to have swallowed half of the contents of a bottle of chlorodyne, purchased at one of Boots' drug stores, because he could not rest. He died on the way to the General Hospital. The Coroner agreed with the foreman of the jury that, although the chlorodyne was sold in a blue poison-bottle, the label was not sufficiently distinct. The jury returned a verdict to the effect that death was due to an overdose of chlorodyne, self-administered, and that there was no evidence as to the deceased's state of mind.

Chlorodyne.—A well-known farmer at Windhill, named John Allison, aged sixty, died from the effects of an overdose of chlorodyne, taken as a remedy for insomnia, and at an inquest held on February 11 a verdict of death through misadventure was returned.

Lysol.—At an inquest held on February 8 it was shown that Miss Josephine Lancaster, aged thirty-four, who was under treatment for a nervous complaint at a medical home in Beaumont Street, Marylebone, had died from drinking lysol, described as "a German preparation containing carbolic acid," used for disinfecting purposes. She appears to have taken a bottle containing the poison from a cupboard, and died soon after drinking the contents, the bottle being found in her bed.—A verdict of suicide during temporary insanity was returned.

Aconite and Belladonna.—An inquest was held at Halifax by Mr. E. H. Hill, District Coroner, on February 10, concerning the death of Mrs. Heap, widow of a Congregational minister, who died on the previous Saturday afternoon as the result of taking some poisonous liniment in mistake for her proper medicine.—Dr. Andrew Morton said he had attended the deceased for several years, chiefly for fits, sometimes half-a-dozen a day. The fits left her dazed, but, while unconscious of what she was doing, she could move about. The liniment which she had taken contained aconite and belladonna, and was the kind usually used for rheumatism. He also supplied the medicine, of which one tablespoonful would be a dose. So far as he could learn, three tablespoonfuls of the liniment had gone. When he reached the house he found Mrs. Heap in a state of stupor, which was such as he would expect from an overdose of the liniment, and her breath smelt strongly of it. He tried emetics and other means of restoring her, without effect, and he had no doubt she died through taking the liniment. He had heard of specially-shaped bottles for poisons, and generally used such for people who were to apply the liniment themselves. In this case it was to be applied by the patient's daughters.—The Coroner said it would be advisable to adhere strictly to the rule of using special bottles, so as to be entirely on the right side. The verdict returned was to the effect that death was due to misadventure.

Obituary.

Gill.—On February 7, James Payne Gill, Ipswich, who for many years was in the service of Messrs. Grimwade, Ridley, and Co., wholesale chemists.

Maxey.—On February 6, William Henry Maxey, Chemist and Druggist, Worcester. Aged 49. Mr. Maxey, who was a native of Lincolnshire, had been connected with the Pharmaceutical Society as a student, associate, and member since 1870, and was at one time an assistant with Messrs. Savory and Moore. He afterwards went into business at Sheffield, where he remained for some years, taking an active part in local pharmaceutical matters, and in 1888 he was elected President of the Sheffield Pharmaceutical and Chemical Society. He subsequently entered into partnership with Mr. Henry George, of Worcester, and for the last twelve years carried on business as a chemist and druggist in Broad Street, Worcester. Mr. Maxey took considerable interest in local affairs, being Secretary and Treasurer of the St. John's Nursing Association, churchwarden of St. Nicholas Parish, and a prominent Freemason, being a Past Master of Lodge No. 280. He had suffered from cancer for about twelve months, and a short time ago underwent an operation, which, however, only afforded temporary relief. Mr. Maxey was held in great esteem by a very wide circle of friends.

Rees.—On February 8, David Rees, Chemist and Druggist, Ystrad, Rhondda. Aged 44. Mr. Rees had been connected with the Pharmaceutical Society as an associate, and latterly as a member, since 1884.

Wildsmith.—On January 30, Edward Wildsmith, Chemist and Druggist, Leeds. Aged 59.

SOCIETY OF CHEMICAL INDUSTRY.

London Section.

At a meeting held on February 3, Mr. Otto Hehner in the chair, among other business, a paper was communicated by Dr. A. Dupre, F.R.S., on

The Explosion of Potassium Chlorate by Heat.

The author stated that experiments he had conducted showed that an explosion could be caused by the action of heat on potassium chlorate without other substances being present. The experiments were described in the paper, and a discussion took place subsequently.

Manchester Section.

At a meeting held at the Victoria Hotel, Manchester, on February 7, Dr. Grossmann in the chair, and Dr. Gerland, whose system of detecting

Minute Quantities of Arsenic

was recently published in the *P.J.* (see *ante*, p. 57), read a paper on the same subject, in which he stated that he had found cadmium a better substance to use in his process than bismuth.

Dr. W. F. Sutherst, F.C.S., then read an interesting paper on the

Chemical Changes in the Ripening of Cheese.

He stated that, according to the latest investigations, milk consists of water, fat, milk sugar, casein, lactalbumine, lactoglobuline, and mineral matter, composed chiefly of calcium phosphate. When rennet was added to milk the casein underwent a change, one portion being precipitated and another remaining dissolved. The name given to the first was paracasein, and to the second whey-pastein. This paracasein formed the basis of cheese. Since the curd had practically the same composition, no matter from what animal the milk was derived, the question arose: "How is it possible that from the same basis such a number of varieties of cheese can be produced?" It was evident that during the after treatment of the curd some particular flavour-giving microbe was more favoured than others, and by its peculiar action the taste and appearance of the respective cheese was obtained. In the ripening process, cheese underwent a great change, but how it was brought about had not yet been decided. The latest investigations attributed it to microbes and enzymes, which had the power to break up the complicated bodies into simpler ones. Of these the microbe action was the most varied, and it was most probably due to their action that the peculiar taste of different cheeses was obtained. After discussing the various acids and their particular action in connection with bacterial growths, the lecturer said that the mould alone would ripen cheese, and Johan Olsen, who had paid particular attention to these, had succeeded in obtaining good qualities of Gorgonzola and Roquefort by inoculating sterilised curd with various pure cultures of moulds obtained from these kinds. It was pretty certain that it was to the micro-organisms present naturally, or intentionally introduced into the curd which gave the numerous varieties of cheeses, and he might say that every variety of cheese had certain special bacteria, to whose action was due the individual taste and appearance. It was possible to prepare any variety of cheese by isolating certain dominant bacteria and placing them in the milk before rennetting, thus allowing the cheese to ripen under the conditions peculiar to the variety.

DEWSBURY CHEMISTS' ASSOCIATION.

At the monthly meeting of the Dewsbury and District Chemists' Association, on February 10, the chair was taken by Mr. R. Broadhead, Vice-President, and a lecture on

Bacteria and their Allies

was delivered by Mr. F. Pilkington Sargeant, F.C.S., of the Leeds College of Pharmacy. There was a large attendance, and the lecture, which was illustrated with limelight views, proved very interesting. An interesting discussion followed, and afterwards Mr. Sargeant was heartily thanked for his lecture on the motion of Mr. S. N. Pickard, seconded by Mr. R Gledhill.

PHARMACEUTICAL SOCIETY OF IRELAND.

The monthly meeting of the Council was held at 63, Lower Mount Street, Dublin, on Wednesday, February 5.

The President, Mr. George Beggs, occupied the chair, and the other members of Council who attended were the Vice-President, Mr. J. J. Bernard; Messrs. Kelly, J. E. Connor (Newry), Moffitt (Belfast), Golding (Birr), W. V. Johnston, Smith, Browne, and Professor Tichborne.

The President welcomed Mr. W. V. Johnston, the new member of Council, and expressed regret at the serious illness of the Hon. Treasurer, Mr. Grindley. He proposed that Mr. Smith should act as temporary Treasurer, and that was unanimously agreed to.

Correspondence and Reports.

A letter from the Privy Council Office acknowledged the receipt of the resolution which the Council had passed in favour of the introduction into the Council's educational system of a course of theoretical chemistry.

Messrs. Moffitt and Tate reported favourably upon the facilities afforded in the Municipal Technical Institute of Belfast for the study of practical chemistry, and it was agreed that the application of the Institute for recognition should be granted. It was also agreed to recognise certain courses at the Crawford Municipal Technical Institute, Cork.

Reports from the examiners showed that at the last Preliminary Examination twenty-one candidates presented themselves, of whom eleven passed; that at the License Examination seventeen presented and five passed; that at the Pharmaceutical Assistants' Examination three candidates presented and all passed, and that at the Registered Druggists' Examination in Belfast four presented and three passed.

The President moved, pursuant to notice, that £50 be allocated out of the funds of the Botany and Materia Medica School to establish a School of Theoretical Chemistry, and that from January 1, 1902, £6 a year rent be charged to the Botany and Materia Medica School for room, gas, etc. There was a sum accumulating to the credit of that school on which they might fairly encroach. This was unanimously agreed to.

Appointment of an Examiner.

The President proposed that Mr. Henry O'Connor, Ph.C., M.P.S., be appointed, and that was unanimously agreed to.

Mr. Moffitt directed attention to the fact that within the last year or two registered druggists in his locality had opened consulting rooms in their places of business, and brought medical men, who gave consultations there and wrote prescriptions, which were compounded in the establishments. He wished to know, for the information of members of the Society in the North, was that legitimate?

The President said the persons referred to were infringing the law, and

The Vice-President said the only way in which the matter could be dealt with was to bring it before the College of Surgeons.

Other business having been disposed of, the Council adjourned.

HALIFAX CHEMISTS' ASSOCIATION.

The annual dinner of the Halifax and District Chemists' Association was held at the Old Cock Hotel, Halifax, on Thursday, February 6, the President, Mr. Gibson Dixon, in the chair.

Mr. A. Hanson (Bradford) proposed the toast of

The Halifax and District Chemists' Association,

and repudiated the suggestion that chemists were a solemn and despondent class of men. He thought that local associations were doing a good work, and that the West Riding was doing especially well, as they now had associations at Bradford, Halifax, Huddersfield, Dewsbury, Wakefield, and Barnsley.

The President, in responding, said that all trades had to put up with a great deal of competition which had to be met somehow; it was no use expecting Parliament to interfere, they must help themselves. This Association had done a little to better themselves by the co-operative buying of patents. They did not go in for scientific discussions, and the reports of their meetings in the trade journals usually took up about three lines, but nevertheless the Association did a lot of really good, useful work. They usually met to talk over business matters.

Mr. Crossley (Manchester) had great pleasure in proposing

Kindred Associations.

He said he had a high opinion of the value of such associations, and believed that anything that could be done for the benefit of the trade would be done by the associations. He thought they could do much towards the furtherance of protective legislation. Regret was expressed at the absence of Mr. Silson (Bradford) and Mr. Broadhead (Batley), and an interesting letter was read from the latter.

Mr. Walshaw (Huddersfield), responding, said he felt rather nervous, as he represented one of the youngest associations in the country. He thanked those present for his cordial reception. He thought the Pharmaceutical Society had been timid in not protesting against the illegal use of chemists' titles. Associations must be on the alert, and pay great attention to pharmaceutical politics. Possibly social meetings were all that was necessary in the past, but now the associations must work, and they could greatly influence the Society, he thought.

Mr. Sargeant (Leeds) thought that the proposed West Riding Federation of Associations might be able to do greater things than each individual association could do. The status of the chemist could not be increased by further education, and the drug store question would doubtless be an object of consideration from now till doomsday. He exhorted everyone to be active and go-ahead, and let who would be professional.

Mr. W. R. Fielding proposed

The Pharmaceutical Society,

and wished it better prosperity in the future. Mr. C. Fielding briefly responded. Other toasts were proposed, and songs were rendered during the evening by Messrs. Hanson, Parkes, E. C. Carr (Normanton), Marchant, Crossley (humorist), and the President. Mr. Cornwell was an efficient accompanist.

CHEMISTS' ASSISTANTS' ASSOCIATION.

The usual weekly meeting of this Association was held at 73, Newman Street, W., on Thursday, February 6, the President, Mr. J. Wicliffe Peck, in the chair. Before commencing the business of the evening, the President said it must have been a great shock to members of that Association to hear the very sad news of

The Death of Mr. William Martindale.

Mr. Martindale, throughout a long life, had been foremost in everything relating to pharmacy and pharmaceutical chemistry. He had borne with singular energy the intense study that his high position had demanded of him, having the esteem and almost reverence of everyone that knew him. Besides the fame that was his on account of his ever active mind and laborious devotion to pharmacy, he also bore the highest character for his sincerity and good life. The President then moved that—

> This Association desires to record the very sad loss that the pharmaceutical world has sustained by the sudden decease of Mr. William Martindale, and that this meeting send to the bereaved family its deepest sympathy and sincere condolence.

The motion was agreed to in silence.

Impromptu Discussion.

Questions having been written upon slips of paper by each person present, then mixed together and re-distributed, the President set the ball rolling by replying to the following:—"Is Some Restriction on

The Sale of Nostrums

Containing Poisons Desirable?" The Pharmacy Act, he said, already imposed restrictions upon the sale of nostrums containing scheduled poisons, and he was not aware that further restrictions were needed.—Mr. Snow and one or two others said that all preparations containing scheduled poisons should not be sold without strictly complying with the law. Even preparations such as Fellow's Syrup should be signed for.—Mr. Pickering asked what was the usual practice in the case of tabloids containing strychnine or nux vomica? He knew that they were commonly sold without any formalities.—The President said he knew that perchloride of mercury tabloids were sold indiscriminately, and several other members said likewise, while Mr. Snow said he was sometimes asked to supply tabloids containing poisons by persons who expressed surprise when he requested them to sign the poison book. Nevertheless, he made it a rule to make customers sign for everything containing poison.—Mr. Franklin said that chlorodyne was frequently sold without any formalities. He thought it would be an advantage if all nostrums containing poison had the ingredients stated on the label.

Alleged Decline in the Art of Pharmacy.

Mr. Snow was asked to explain the cause for the decline in the art of pharmacy, as evidenced by the fact that very few retail pharmacists now make their own pharmaceutical preparations. He said there could be no doubt that a great many preparations that could easily be made by the retail pharmacist were now supplied by wholesale houses, and he could not understand why that was so.—Mr. Franklin thought the decline in the art of pharmacy was the result of the inefficient training of the present-day apprentices, who had not the practice in making pharmaceutical preparations that their fathers had.—Mr. Pickering and Mr. Tweedy thought it was a matter of economy, instancing such preparations as camphorated oil and confection of senna as articles which could be bought much cheaper than they could be made by the retail pharmacist.—Several other members expressed the opinion that many chemists do not keep their agreement with apprentices because they never show them how to make any preparations.

A Good Side-Line.

Mr. **Tweedy**, in reply to a query as to what side-line he would recommend a young pharmacist to take up when commencing business in an average-sized provincial town, said he should strongly recommend photography, although a photographic business had its disadvantages in those cases where no assistants were kept. It was, of course, advisable that the pharmacist who was also a photographic dealer should have a good working knowledge of photography.—Other members suggested a soda fountain or an optical business as remunerative side-lines, while it was stated that in some country districts a bar where whisky and cigars were retailed was often to be found attached to the pharmacy.

Is a Pharmaceutical Degree Possible?

Mr. **Frost**, replying to this question, said he thought the query should have been worded: "Is a Pharmaceutical Degree advisable?" If the degree gave the pharmacist the right to the title "Dr." he did not think it was advisable, because the public would not readily distinguish between the pharmaceutical and the medical qualification. Moreover, the Major diploma was somewhat of the nature of a degree.—Mr. **Lownsbrough** said that if a pharmaceutical degree ever became attainable it would raise the old question of "Trade or Profession?" He thought if the whole standing of chemists were raised to the dignity of a profession the degree of Ph.C. would be sufficient. —Mr. **Franklin** said he put the question under consideration, and he agreed with Mr. Frost that it should have been "advisable" instead of "possible." He thought there ought to be a degree beyond that of Ph.C., because now that all pharmaceutical preparations are made by wholesale houses it would be a good thing if the pharmacist were able, should he be so inclined, to attain to something higher. His pharmaceutical training pre-eminently fitted him to qualify as an analyst of food and drugs; but at the present time there was no degree in pharmacy which qualified its holder to take the position of an analytical chemist. The ordinary public analyst knew very little about drugs or pharmacy.—Mr. **Tweedy** thought the Pharmaceutical Society made a mistake in letting the Institute of Chemistry establish a qualification for analytical chemistry. —Mr. **Franklin** agreed, and pointed out that now, if a young pharmacist was desirous of becoming a Fellow of the Institute of Chemistry, he has to spend a further three years in the laboratory of a F.I.C., his training as a pharmacist counting for nothing.—The **President**, Mr. **Pickering**, and one or two others supported the views expressed by Mr. Franklin, and it was thought that if a Fellowship of the Pharmaceutical Society could be established it might meet present requirements.

Other Questions, Including the Pharmacy Bill.

Several other questions were asked, relating to a weekly half-holiday for pharmacists, the commercial value of a knowledge of photography to a chemist's assistant, and the use of the Centigrade scale by pharmacists; and a conversational discussion took place on the question: "Are chemists expecting more than they will get, or more than they ought to get, from the new Pharmacy Bill?" The general view of the matter seemed to be that the chemist who expects to get anything to his advantage from Parliament is a very sanguine person. At the same time it was thought that inasmuch as the Legislature has passed an Act requiring chemists to pass a compulsory examination before they can legally keep open shop for the sale of certain poisons, it was only reasonable that the trade should be confined to those persons who have complied with the law by passing that examination. But if, in the near future, the Legislature should decide that the sale of poisons in the manufacturer's sealed packages may safely be entrusted to persons other than chemists, then chemists would be justified in demanding such an amendment of the Pharmacy Act, 1868, as would give them that which they are really qualified for, the compounding and dispensing of medicines.

EDINBURGH CHEMISTS' ASSOCIATION.

An open meeting of the Edinburgh Chemists', Assistants', and Apprentices' Association, arranged by Mr. W. B. Cowie, was held in the Pharmaceutical Society's House, 36, York Place, Edinburgh, on Wednesday, January 29, at 9.15 p.m., Mr. J. G. **Sclater**, President, in the chair.

Mr. D. **MacEwan** read a note on

The Manufacture of Leather,

in which he gave a description of the manufacture of this useful and universally used substance. He described the different kinds of leather and methods of tanning. A number of samples of leather and tanning materials were on view.

Mr. W. B. **Cowie** next communicated a note on

Glycerin of Starch.

He said the official directions for making the preparation are so indefinite that it is almost impossible for operators to obtain anything like similar products, notwithstanding the fact that they may conscientiously carry out the official directions. To clearly show this, he gave five students an order to make one-fifth of the B.P. quantity of glycerin of starch, checked the calculations and all the weighings, and personally supervised all the operations, except that he allowed each to use his own discretion in regard to what he considered a translucent jelly. The same operators each prepared a second quantity of glycerin of starch, which was checked in every detail, as in the previous set. The results are here appended for comparison:—

Number.		Weight in Grains.	Diff. in Grains Between Products by Same Operator.	Appearance.
A.	(a)	872	12	Translucent.
	(b)	884		Translucent.
B.	(a)	855	34	Granular.
	(b)	821		Very granular.
C.	(a)	882	73	Very granular.
	(b)	809		Very granular.
D.	(a)	815	11	Very granular.
	(b)	804		Very granular.
E.	(a)	895	37	Translucent.
	(b)	858		Granular.

This table shows at a glance the difference between the first and second quantities made by the same operators, and also the difference between the weights of the products made by the five operators. It is shown here that the same operator is unable to produce a product of the same weight, notwithstanding the fact that he works with the same weights of its constituents. Here the variations range from 12 to 73 grains, and this at first sight may appear to be very small, but on calculating it to the B.P. quantity in ounces we show a variation of 60 to 365 grains. The total weight of starch, glycerin, and water operated upon was 935·375 grains. The weight of the heaviest product was 894 grains, and that of the lightest 804 grains, showing a variation in loss of water during gelatination of 40 to 131 grains; this, when calculated to the B.P. quantity in ounces, shows a variation of 200 to 655 grains. The samples varied considerably in consistency, though it is a matter of considerable importance that the consistency of such preparations should always be uniform, as well as a great advantage to be able to calculate the exact quantity of each ingredient before mixing, because glycerin of starch is frequently prescribed with a certain percentage of some active ingredient, such as boric acid or ichthyol, and a finer product is often obtained by first dissolving the active ingredient in the water or glycerin previous to gelatination. The present B.P. formula does not admit of that. To get over those difficulties, variations in consistency and in weight, the following formula and directions were suggested by the author:—Starch, 1 ounce; glycerin, 8 ounces (by weight); distilled water, 2 ounces, or *q.s.* Mix, and heat with constant stirring until a translucent jelly is formed, then evaporate until the product weighs 10 ounces. Samples F and G were prepared according to the above formula and directions, and both had the same appearance, consistency, and weight.

Mr. Cowie also read a note on

Collodion and Flexible Collodion.

He said he had no fault to find with the formula for this preparation, but from experience in making small quantities according to the official directions he found that the pyroxylin often took days to dissolve. If, however, the pyroxylin be first soaked in the alcohol and then shaken up with the ether, solution takes place immediately. The explanation seems to be that the alcohol, which has little or no solvent action on the pyroxylin, simply fills up the cavities of the cotton, and the ether, when added quickly, penetrates into the mass in which a large surface is presented to it, hence quick solution. It was suggested that the official directions for this preparation should read thus:—"Place the pyroxylin in a bottle, add the alcohol, and see that the former is completely soaked; then add the ether quickly; shake; set aside for a few days; decant the clear collodion. In making flexible collodion the B.P. directs the collodion to be measured, and as that entails a considerable loss it is much better and more economical to weigh the collodion. The equivalent in weight can easily be obtained by multiplying the volume by the specific gravity, which is approximately 0·789 – 0·8. Instead of taking 12 ounces by measure it is only necessary to take 9½ ounces by weight, and add to that the weights of the other ingredients as ordered.

The reading of the papers was followed by a discussion, taken part in by Messrs. Fraser McDiarmid, Douglas, Smith, Hutcheon, and Garrow. On the motion of the President, votes of thanks were awarded Messrs. Cowie and McEwan, and the meeting closed.

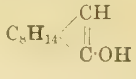
CHEMICAL SOCIETY.

At a meeting held at Burlington House, Piccadilly, on February 6, Professor Armstrong took the chair, and after the preliminary business had been disposed of,

Dr. Forster was called upon for his paper on the

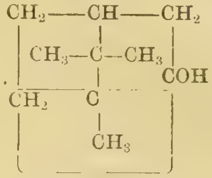
Conversion of *l*-Hydroxycamphene into β-Halogen Derivatives of Camphor.

The author began by referring to an isomeride of camphor which he had obtained and described in a paper delivered to the Society last year. The various steps by which the substance had been obtained were referred to, and the possible formulæ discussed. The enolic form



seemed to be the most probable one. In order to determine its structure the action of bromine on the substance was studied. If the enolic formula were correct a brom-camphor, having a melting point of 78° and specific rotation of $[\alpha]_D = +19$, would have been formed, whereas this isomeride yielded a substance whose m.p. was 76° and $[\alpha]_D = +135$. It then became necessary to ascertain the position taken up by the bromine in the molecule; it was found that an α-β-dibromcamphor was produced.

On hydrolysis α-campholenic acid was obtained. Although the structural formula of the substance is not considered by the author to be definitely established, he considers the following to be the most probable:—



Mr. W. R. Innes was then called upon for his paper on

The Influence of Temperature on Association in Benzene Solution, and the Value of the Molecular Rise of Boiling Point for Benzene at Different Temperatures.

The molecular weight of certain substances was found to be higher in concentrated benzene solutions. The author described the apparatus used in the determinations, which consisted in a Beckmann's boiling-point apparatus, and by means of an ingenious electro-magnetic attachment the pressure was kept constant. Benzophenone and phenanthrene give results which show that these substances tend to form double molecules, whilst the molecular weight of di-methyl-tartrate appears to increase without definite limit.

The author concluded by saying that molecular weights in all cases showed a tendency to increase with a rise of temperature up to about 80° C.

Dr. Perkin, sen., next contributed a paper in continuation of his work on

The Magnetic Rotation of Ring Compounds, etc.

A brief summary of the paper was given. Dr. Perkin pointed out that there was considerable difference between the rotation of ring compounds and corresponding open chain compounds. The various figures obtained for various bodies was discussed and compared. The effect of double bridging, as in camphor, gives approximately double values.

The President, in offering his congratulations, said that he was simply amazed at the way in which Dr. Perkin maintained his vigour, interest, and enthusiasm in his work.

The next paper was by Mr. Steele, describing his work on the

Measurement of Transport Numbers of Ionisation.

For convenience, the transport numbers might be divided into two classes:—(1) Those in which there was little or no change, according to concentration, as in potassium chloride; (2) Those in which there is considerable variation as in calcium chloride.

The investigation undertaken by the author was the measurement in very dilute solutions: he then proceeded to describe the apparatus used in carrying out the experiment. The following numbers for the velocity of the individual ions were obtained:—

Ca 538.	SO_4 682.
Ca 520.	Cl 667.
Ca 520.	NO_3 635.
K 651.	Cl 664.
K 672.	SO_4 683.

It was pointed out that the SO_4 ion appears to exert an influence on the rate of transport of the other ions.

Brittle Platinum.

A communication by Professor Hartley was read in abstract by one of the secretaries on "An Investigation into the Composition of Brittle Platinum." The pieces of platinum were obtained from a dentist, and were submitted to the author for investigation. He had examined them spectroscopically, and proved the absence of certain metals likely to have a deleterious effect. The author concluded that it was probably due to traces of phosphorus and carbon.

Mr. Fletcher asked permission to comment on the paper. He considered that the brittleness was entirely due to a peculiar molecular disturbance produced when the platinum was at a high temperature. He had examined some of the metal obtained from a similar source, and he entirely disagreed with the view that the effect was due to the impurities mentioned; further, he thought he could undertake to produce a similar effect by mechanical strain at high temperatures.

Several papers were taken as read, and the meeting adjourned.

YOUNG CHEMISTS' ASSOCIATION.

At a meeting of this Association, held at Newcastle-on-Tyne on February 5, the chair was taken by the President, Mr. Barry Noble, who called upon

Mr. G. F. Merson to give an address on

Pharmaceutical Processes.

Mr. Merson said the subject was a very congenial one to him, and it was a great pleasure to him to be able to help in this way. Practical pharmacy was always more interesting than the theoretical portion; moreover, it embodied both science and art. In the north of England they were heavily handicapped with regard to dispensing, and it was almost impossible to acquire a decent knowledge of that portion of the work. Taking the official syllabus as his guide, there came first, "Operations requiring the use of heat." Almost all operations involved heat in some way or other. They might say dissolving pot. brom. in water produced no heat. No, but it produced cold, which was merely absence of heat. In evaporation they had to guard against boiling, as it tended to destroy the aroma, and sometimes the active principles. A water bath, which was generally used, gave a temperature of about 208°. The evaporating vessel should be broad and shallow, and a free current of air should pass through the room where the process was going on, as the air would only hold in suspension a certain quantity of moisture; if the air was already fully charged evaporation would be very slow. He pointed out the difference between water, steam, and sand baths. By means of a vacuum pan evaporation was conducted at about 100° F., though the pressure was only one pound to the square inch. Boiling point was only a relative term, as at increased pressure the boiling point temperature was raised, similarly diminished pressure gave a lower boiling point. Ordinary distillation was converting a liquid to a vapour and cooling.

In distilling water the B.P. directed the first portion to be rejected. This was because the volatile substances dissolved in the water would come over first. After about two-thirds had come over, distillation was required to be stopped, this was because the remaining liquid contained various salts in solution, which had a tendency to react on each other and form other compounds, some of them volatile. In fractional distillation the portions boiling at certain temperatures were renewed and set aside. Then these portions were further distilled and divided until uniform products were obtained. In destructive distillation the chemical structure of the substance was altered. For instance, in the destructive distillation of coal, it was split up into coal gas, tar, etc. A log of beechwood produced acetic acid, tar, and other matters. Fractional distillation was employed to obtain pure creosote from wood tar. In all distillation processes some condensing apparatus was required. In most instances a Liebig's condenser was used, but in some cases, such as spt. æth. nit., required a more intense cold, such as was produced by ice and salt. Sublimation was distillation of a solid, without change in its composition. If they heated a little iodine on a spatula and held a cold evaporating basin above, the iodine would be condensed on the basin's surface. Calcination was the heating of a powder to redness generally, driving off CO_2 and water. Marble heated to redness had the CO_2 and water driven off and left calcium oxide (quicklime) behind. Desiccation simply meant drying. In this country the sun had not sufficient power to dry leaves, etc., in the open air, so that it was usually carried on in a drying oven. In drying herbs by the sun's heat great care had to be exercised to avoid fermentation, which was active at about 90° F. It was usual in drying drugs to expose them to the highest possible temperature, *i.e.*, without destroying its properties, for a short time, rather than to a low temperature for a longer period.

He next came to cutting, bruising and pulverisation. Catechu and cinchona bark were very easily powdered, but mezereon bark resisted the attempts most vigorously. Pulverisation of this was accomplished by means of a drug-mill, the stones of which practically tore it to fine particles. The powders were sifted and divided into various grades. A No. 20 powder was one which could pass through a sieve with twenty meshes to the linear inch. Levigation was trituration of a powder with water. He drew attention to the fact that young students sometimes thought that hyd. ox. lev. meant light oxide of mercury. Elutriation meant shaking a powder with water and allowing to settle a little, and then pouring the liquid off. By this means the gritty and heavy portions were left behind whilst the light powder was carried over. In making skin lotions with calamine he thought it better to allow it to settle in this manner and pour off again, rather than to adhere religiously to the prescription. Of course, allowance could be made for the slight loss. If a solution of ferri sulph. were poured into spirit, ferri sulph. granulat. would be formed. This was a good example of granulation. He had found that with regard to scale preparations, the thin scales were much more convenient for dispensing than the thicker and bolder scales. The solution of gum acacia was best effected when the gum was in pieces about the size of a pea. When the powder was used the mucilage formed collected round the powder and prevented the water from coming in contact with the inner powder. Lime salts were more soluble in cold than in hot water, therefore the liq. calcis should be kept in a very cool place. He had heard a story of an enterprising Edinburgh chemist who advertised a concentrated lime water. It leaked out that he made it with boiling water. He (Mr. Merson) was afraid the Food and Drug Inspector had not been very active there.

The position of the salt had a great deal to do with solution. In making camphor water by the old method the camphor had to be anchored to the bottom of the bottle by a piece of glass tubing, the water, as it became impregnated with the camphor, rose to the surface, and so it went on. If the camphor had merely been left placed in with the water there would have been a layer of camphor above and plain water below, to a certain extent. If they were to place a crystal of pot. bichrom. in a test tube and fill it up with water they would see the coloured fluid rising gradually. The saturation point varied with the temperature. It had once been debated whether solutions made by boiling with more salt than was soluble in the cold would not, when the excess crystallised out, be weaker than one made by trituration with successive portions of water, owing to the excess carrying a little more with it. It had been now satisfactorily proved that the excess did not carry any more down with it. By lixiviation was meant the washing away of soluble salts from a mixture. There was a very fine division between infusion and decoction. If the boiling water was poured over the drug in the ordinary way it was an infusion, but if the drug was added to the water boiling, no matter how soon after the source of heat was removed, it was a decoction. They might think it was the same in both cases, but not so, for the act of removing the boiling water from the source of heat, and pouring it over the drug, reduced the temperature, and hence it was not quite boiling, whereas in the other case it was. Digestion might be termed maceration at blood heat, or about 90° to 100° F. In maceration, as they all knew, the drug was covered with the required quantity of menstruum and set aside for a certain time, generally a week, being agitated occasionally. Maceration was a necessary preliminary to percolation. After maceration for twenty-four hours the powder should be passed through a sieve and then packed in a percolator—York Glass Co.'s new pattern, or Toogood's for preference If they could count the drops percolation was proceeding satisfactorily. In many instances where filtration was necessary a plug of absorbent cotton wool, moistened a little, answered as well and was quicker. To tell absorbent wool from the ordinary throw a little on to water; absorbent wool will sink very quickly, while the other will not. Above all things they had never to have any surplus paper over the top of the funnel. Trim the paper so as to have it a little below the edge. In dialysis the substance is placed in the dialyser, and the crystals passed through the parchment, whilst the colloids remained inside. This was made use of in examining animal tissues in cases of suspected poisoning. Expression was often obtained by hydraulic power. Water was practically incompressible, hence when it was pressed something had to give way; in this case the table was forced up by the water and it squeezed the herbs or whatever was on it.

After a short discussion, Mr. BLECHYNDEN proposed a hearty vote of thanks to Mr. Merson for his address. This was seconded by Mr. W. N. SCOTT, and carried with acclamation.

Mr. MERSON, replying, thanked those present for their kind appreciation, but thought they ought to come forward with papers themselves. It would be better if older ones like himself kept out of the way, otherwise the Association would fail in one of its vital objects.

ROYAL SOCIETY.

At a meeting of the Royal Society held on February 6, Sir WILLIAM HUGGINS, President, in the chair, the Prince of Wales was formally admitted a Fellow of the Society, and Sir WILLIAM CROOKES communicated the substance of two important papers on (1) "The Stratifications of Hydrogen" and (2) "Radio-activity and the Electron Theory." His experiments revealed the conspicuous success which has attended his attempts to prepare pure hydrogen, and also exhibited the stratifications produced by the purified gas under the influence of an induction current. In his remarks on

Radiant Matter and Electrons,

the lecturer said that nearly twenty-five years ago he was led by experiments in highly rarefied tubes to assume the existence of matter in an ultra-gaseous state. Later, in a lecture delivered before the British Association in 1879, he first used the expression "radiant matter," or matter in the ultra-gaseous state, to explain the novel phenomena of phosphorescence, trajectory shadows, mechanical action, magnetisation, and intense heat. He then pointed out that in studying this fourth state of matter, we seem to have within our grasp, and obedient to control, the little indivisible particles which with good warrant are supposed to constitute the physical basis of the universe. In some of its properties radiant matter is quite material, whilst in respect of other properties it almost assumes the character of radiant energy, so that we have actually touched the borderland where matter and force seem to merge into one another." Radiant matter is now spoken of as "electrons"—a term coined by Dr. Johnstone Stoney to represent the separate units of electricity, which is as atomic as matter. What was puzzling and unexplained by the "radiant matter" theory is now rendered precise and luminous by the "electron" theory. A chemical ion consists of a material nucleus, or atom of matter, constituting by far the larger portion of the mass, and of a few electrons or atoms of electricity. The electrons are the same as the "satellites" of Lord Kelvin, and the "corpuscles," or particles, of J. J. Thomson. Electrons probably leave the negative pole with a velocity nearly uniform, modified to a considerable extent by the degree of exhaustion, and to a less extent by the electromotive force behind them. Many experiments show that the liberated electrons do not behave as a gas, *i.e.*, they have not properties dependent on inter-collisions, mean free path, etc. They act more like a fog or mist, are mobile, and are carried about by a current of air to which they give temporary conducting powers, clinging to positively electrified bodies and thereby losing mobility, and settling on the walls of the containing vessel if left quiet. On the other hand, the crowd of hydrogen or mercury atoms, by virtue of molecular motion and inter-collisions, act as gases. Whilst their mean free paths are conditioned by the degree of exhaustion, there may be amongst them a certain number of actual free paths differing widely on each side of the mean. Under the influence of the electromotive force, and at the right degree of exhaustion, those atoms arrange themselves in groups, while the rushing swarm of electrons driven from the negative pole meet them and render them visible. According to J. J. Thomson, the mass of an electron is about the 1/700th part of that of the hydrogen atom, and as those masses start from the negative pole in a vacuum tube with a velocity of the order of half that of light, it is easy to see that their heating, phosphorescent, and mechanical power must be stupendous. The basis of the electron is probably the same in all cases, the protyle from which the chemical atoms are assumed to be formed. On the two-fluid theory, the electrons constitute free negative electricity, and the rest of the chemical atom is charged positively, although a free positive electron is not known. It seemed to the lecturer simpler to use the original one-fluid theory of Franklin, and to say that the electron is the atom or unit of electricity. Then a so-called negatively charged chemical atom is one having a surplus of electrons, the number depending on the valency, whilst a positively charged atom is one having a deficiency of electrons. Differences of electrical charge may thus be likened to debits and credits in one's banking account, the electrons acting as current coin of the realm.

PLYMOUTH CHEMISTS' ASSOCIATION.

At a meeting of junior assistants and apprentices, held on Wednesday, February 5, it was decided to form a junior association, which should be affiliated with the Plymouth and District Chemists' Association. Mr. W. NORMAN-HARRIS, who presided, said he thought some means should be adopted to bring apprentices and junior assistants more in touch with one another, both from the educational and social sides, and the following officers were elected:—Chairman, Mr. Norman-Harris; Vice-Chairman, Mr. Groombridge; Hon. Secretary, Mr. Lovatt; Committee, Messrs. Ancliffe, Lord, Stancombe; Junior Delegates, Messrs. Groombridge and Stancombe.

A vote of thanks was proposed to Mr. LOVATT for organising the meeting, but, in reply, he said the thanks were really due to Mr. C. T. Weary, the President of the senior Association, with whom the idea originated.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

YOHIMBI BARK.

The botanical source of this bark, which has been frequently mentioned in journals of pharmacy, does not appear to have been definitely stated hitherto in any of them. It has been identified by Dr. K. Schumann, of Berlin, to be a new species of *Corynanthe* (Nat. Ord. Rubiaceæ), viz., *C. yohimbi*. Schum., and is described in the *Notizblatt der Bot. Gart. in Museum zu Berlin*, No. 25, Bd. 3, p. 93-94. It is a large tree growing near Kribi, in the southern district of the Cameroons, and is distinguished from the few other species of the genus by the long tails to the corolla-lobes. The bark is stated to be 8-10 Mm. thick with an external corky layer of a grey-brown colour covered with isolated lichens. It shows numerous longitudinal and transverse fissures like some old specimens of cinchona bark. The transverse fracture is of a uniform yellowish-brown colour, and presents short soft fibrous fracture like rough velvet. Under the microscope the structure much resembles that of cinchona, but differs in the arrangement of the bast fibres of the secondary bark in definite long radial series.

EXTINCT FERNS.

Dr. H. Scott, F.R.S., F.L.S., gave an account at a recent meeting of the Linnean Society of an extinct family of ferns—the Botryopterideæ, our knowledge of which is primarily due to the researches of M. Renault. The vegetative organs and sporangia of the type-genus *Botryopteris* were described, and two British Palæozoic species, *B. hirsuta*, Will., and *B. ramosa*, Will., were added to the genus on the ground of their anatomical structure. The genus *Zygopteris*, also known with some degree of completeness, was next dealt with, and the structure of the British species *Z. grayi*, Will., described in some detail. Reasons were given for including other genera, such as *Anachoropteris*, *Asterochlæna*, and *Tubicaulis* in the family, while a close connection with *Diplolabis* and *Corynepteris* was also regarded as probable. The affinities of the group were discussed in conclusion, points of agreement with Hymenophyllaceæ, Osmundaceæ, Ophioglossaceæ, and other families of ferns being pointed out. Heterospory, believed by M. Renault to exist in *Botryopteris* and *Zygopteris*, was not regarded as established, and affinities were sought rather among homosporous Filices.

SENSITIVENESS OF THE ROOT-TIP.

F. Darwin has read a paper before the Linnean Society, on a method of investigating the gravitational sensitiveness of the root-tip. Confining himself to the modern development of the question, the author remarked that the observations of Czapek and of Pfeffer having been contradicted by Wachtel, it had become desirable to confirm these observations by employing a different method. The apparatus used consisted of a counter-balanced lever, 53 Cm. long, able to turn in any direction by being mounted on knife-edges. Seedlings of the bean and the pea were employed, and glass tubes, straws, and dandelion scape were in turn used to contain the root-tip, and by the aid of certain mechanical appliances, to prevent the root slipping out of the tube. The tip being fixed, the remaining part of the root and the hypocotyl became curved in varying degrees, due to the continued stimulation of the root-tip. The result has been confirmation of the observations made both by Czapek and by Pfeffer.

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UNION OF HYDROGEN AND CHLORINE.

J. W. Mellor and W. R. Anderson state that the momentary expansion (the Draper effect) which occurs when a mixture of equal volumes of hydrogen and chlorine is exposed to a flash of light appears to be due to some disturbance in the gas which attends chemical combination, and is only produced when luminous rays impinge upon a mixture of approximately equal volumes of the two gases, but not upon chlorine alone, either under reduced or under ordinary pressures, or at temperatures between 15° and 100°. It is not produced when chlorine is mixed with steam, air, nitrogen, carbon dioxide, carbon monoxide, or methane. When the effect reaches a certain magnitude the mixture explodes. Although a few sparks bring about no measurable combination of mixed gases, the joint effects of a great number of sparks at intervals of half-an-hour or of one hour is measurable, thus showing that chemical combination takes place during the Draper effect. The amount of combination depends not only upon the number but also upon the intensity of the sparks.—*Proc. Chem. Soc.*, **18**, 32.

SEPALODY.

Professor J. Reynolds Green exhibited before the Linnean Society, on February 6, some primroses which showed the rare phenomenon of sepalody. The corolla was green, and the limbs of the petals were rugose and of a texture almost comparable with that of the foliage-leaves. He also showed another specimen in which the calyx as well as the corolla was petaloid. Both specimens were received from a garden in the North of England.

OPTICALLY ACTIVE METHYLBENZYL-ACETIC ACID.

A. Lapworth and W. H. Lenton, in order to obtain further evidence on the question as to whether α-substitution in acids and ketones is the result of direct replacement of the hydrogen atom or is preceded by the formation of an ethylenic compound with the group $\cdot\dot{C}{:}\dot{C}\cdot O\cdot$, have made attempts to prepare an optically active acid which would undergo racemisation if the latter view were the correct one. For this purpose methylbenzylacetic acid was thought to be the most convenient substance, as it is easily synthesised and in its usual form is a solid at the ordinary temperature; the quinine salt of the acid was therefore fractionally crystallised from ethyl acetate until the melting point and specific rotation of the least soluble portions remained constant. Quinine *d*-methylbenzylacetate crystallised from ethyl acetate in well-formed needles which melted at 117°. In a paper by F. S. Kipping (*Proc. Chem. Soc.*, **18**, 34) it is stated that the salt crystallises in prisms, melts at 118-119° and is very readily soluble in warm alcohol, but only sparingly so in boiling water; it has a specific rotation $[\alpha]_D = -113°$ in ethyl alcohol solution, and $[\alpha]_D = -76°$ in ethyl acetate. *d*-Methylbenzylacetic acid, $CH_2Ph{\cdot}CHMe{\cdot}CO_2H$, is a colourless oil at ordinary temperatures; according to Lapworth and Lenton, its specific rotation in 1 per cent. ethyl acetate solution was $[\alpha]_D = +14{\cdot}9°$, while the ethyl ester, under similar conditions, has $[\alpha]_D = +13{\cdot}2°$. Kipping states that the highest specific rotation which has been observed with different samples of *d*-methylbenzylacetic acid (without solvent) is $[\alpha]_D = +20{\cdot}3°$, while the sodium salt, purified by fractionally precipitating its alcoholic solution with ether, crystallises in colourless plates and has a specific rotation $[\alpha]_D = +26°$ in dilute aqueous solution. Lapworth and Lenton state that the active acid does not racemise appreciably at temperatures below 130°, but when its chloride is brominated at 80-90°, the product is optically inactive.—*Proc. Chem. Soc.*, **18**, 36.

ANALYTICAL NOTES.

BY F. A. UPSHER SMITH,

Demonstrator in the Pharmacy Research Laboratory of the Pharmaceutical Society.

In a report by Professor Greenish and myself on the solubility of certain chemical substances mentioned in the British Pharmacopœia, published in the *Pharmaceutical Journal*,[*] certain analytical points were not dealt with at length, since they had no direct bearing on the question of solubilities. They are, however, of sufficient interest to place on record. The substances, whose examination it is proposed to deal with in the following notes, are plumbi acetas, ammonii benzoas, potassii acetas, potassii citras, sodii arsenas, and sodii nitris, and these will now be referred to in the order given.

Volumetric Test for Plumbi Acetas.—The British Pharmacopœia directs this salt to be quantitatively determined by precipitation with volumetric solution of sulphuric acid, but, as was shown in the report,[†] the test requires special precautions in order to yield good results, so much so that the actual determination of the salt for solubility purposes was made by another method, due to Hempel, which is given in Sutton.[‡] This process depends on the precipitation of lead as lead oxalate by means of an excess of volumetric solution of oxalic acid the excess of which is determined by titration with volumetric potassium permanganate solution. The amount of oxalic acid that reacts with the lead salt is thus found, and this gives the amount of lead salt present. In practice about 20 C.c. of a saturated solution of lead acetate was mixed with 20 C.c. of acetic acid, and 40 C.c. of normal oxalic acid solution. The whole was acidified with sulphuric acid, made up to a litre with recently boiled and cooled distilled water, boiled, and the clear liquid titrated with N/10 permanganate while at a temperature of about 60° C. It is necessary to use heat in order to start the reaction and ensure its completion. According to Sutton the method is not absolutely accurate, owing to the slight solubility of the precipitated lead oxalate, but with careful manipulation the error need not exceed 1 per cent. He also states that the error is much increased by the presence of ammoniacal salts. In titrating oxalic acid with permanganate the reaction is slow at first; the characteristic colour of the permanganate, however, afterwards passes through different shades of brown and yellow, ultimately disappearing and leaving a water-white solution. The order of titration should never be reversed.

Desiccation of Ammonii Benzoas.—The evaporation of this salt in aqueous solution is liable to be attended by loss. According to Berzelius when the solution is evaporated an acid salt is formed owing to volatilisation of part of the ammonia; this led him to doubt whether a perfectly neutral sample could be obtained. On the other hand, when an excess of alkali is present, the salt is deliquescent. In determining the strength of the solution for taking the solubility weighed quantities of the solution were dried over sulphuric acid in a desiccator attached to a pump whereby a partial vacuum was obtained. The loss in weight, when all apparent moisture had disappeared, was very gradual. By way of example particulars of one determination will be given. Operating on 1·7906 Gm. of saturated solution the loss was as follows:—

Time.	Loss.	Corresponding Solubility.
After 1 day	1·1960 Gm.	
After 5 days	1·4924 Gm.	1 in 5·005
After 6 days	1·4929 Gm.	1 in 5·036
After 9 days	1·4941 Gm.	1 in 5·039
After 17 days	1·4964 Gm.	1 in 5·086

It is seen, therefore, that while the loss is continuous it is too slight to materially affect the solubility figure of the salt.

Desiccation of Potassii Acetas.—The heating of this deliquescent substance at 110° C. is attended by a very gradual loss of water, but experiment shows that the solubility figure is practically the same whether calculated on the weight of residue after heating for two or sixteen hours; in one experiment the calculated solubility, after heating the residue for two hours, was 1 in 0·414, and, after sixteen hours, 1 in 0·419.

Test for Sulphates, Chlorides, etc., in Potassii Citras.—This substance is officially required to give only the slightest reactions for chlorides and sulphates. In applying these tests in the case of organic substances the best plan is to ignite the substance in an open dish, oxidise the residue by adding concentrated nitric acid and continuing the application of heat until combustion ceases. The residue is then extracted with hot water, filtered, and the filtrate examined for chlorides and sulphates. These precautions are advisable because certain organic substances tend to prevent the precipitation of inorganic substances by ordinary reagents.

Test for Phosphate in Sodii Arsenas.—The usual qualitative test for a phosphate by means of ammonium molybdate is not applicable in this case because both arsenates and phosphates react with that reagent. The method that is usually adopted in such cases is to reduce the arsenate to arsenite by means of sulphur dioxide, the solution being made acid with hydrochloric acid. When reduction is complete and the excess of SO_2 driven off by evaporation hydrogen sulphide is passed in to precipitate arsenious sulphide, and the filtrate tested for phosphate with ammonium molybdate. This method works well.

Sodii Nitris.—Experiments were made to determine how best to titrate a nitrite with potassium permanganate, with the result that the following method was adopted:—Run in nearly all the permanganate required (as determined by a preliminary experiment), then acidify and continue the addition of permanganate until the pink colour remains permanent for one minute. The following are the experiments referred to. The first question to be settled was the order of mixing the solutions. A solution of potassium permanganate was run into 10 C.c. of the nitrite solution acidulated with sulphuric acid; 27·1 C.c. were required. Next the approximate quantity of permanganate was run in, the acid then added and the titration quickly finished with permanganate. In this case 27·1 and 27·4 C.c. of permanganate were required. The opposite order of mixing was next tried, the permanganate being acidulated and then titrated with the nitrite solution until colourless. Two duplicate experiments each required 11·15 C.c. of nitrite solution for 30 C.c. of permanganate solution, equivalent to 26·9 C.c. permanganate per 10 C.c. of nitrite solution as used in previous experiments. Hence it appears that, provided the bulk of the reacting solutions are mixed before acidulating it does not make any difference whether the permanganate is added to the nitrite, or whether the reverse order of mixing is adopted.

Comparative titrations with another nitrite solution showed that it is not well to acidulate the nitrite before running in the permanganate, because, as might be expected, the decomposition results in a loss of gas before the permanganate can be run in. Three experiments show this:—

(*a*) 10 C.c. nitrite solution, acidulated with 5 C.c. dilute sulphuric acid, then titrated with permanganate, required 26·1 C.c. of permanganate solution.

(*b*) 10 C.c. nitrite solution, mixed with the bulk of the permanganate solution, then 2 C.c. sulphuric acid added, required 27·3 C.c. permanganate.

(*c*) The permanganate was acidulated and the nitrite then run in. The relative proportions of nitrite solution and permanganate solution, calculated into uniformity with (*a*) and (*b*) are 10 C.c. of nitrite and 26·9 C.c. of permanganate.

Hence it is evident that method (*a*) gives lower results than methods (*b*) and (*c*), which give results which are not very

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Pharm. Journ. [4], **12**, pp. 774, 806.

[†] ibid.

[‡] Sutton's 'Volumetric Analysis,' 7th edition, p. 222

different. Of methods (*b*) and (*c*) the former is preferable, because the end-reaction is a coloured one, whereas in (*c*) the disappearance of colour marks the end-reaction.

Certain other tests will now be alluded to, viz., the tests for iron and hypophosphites; reference will also be made to a method of approximately valuing the quantity of impurities contained in chemical substances.

THE THIOCYANATE TEST FOR IRON.—The test usually given for iron to boil with a few drops of nitric acid, in order to raise the iron to the ferric state, and then add a solution of ammonium thiocyanate, is liable to mislead, because nitric acid alone gives a reddish tint with ammonium thiocyanate, due to the oxides of nitrogen that are given off. Boiling the solution disperses these and leaves a green solution. If iron is present the red colour remains, though it may be lighter in colour. Dilute hydrochloric acid also strikes a reddish tint with ammonium thiocyanate. The remedy consists in just neutralising the solution with ammonia after boiling with nitric acid.

THE AMMONIUM MOLYBDATE TEST FOR HYPOPHOSPHITES.—This test[*] for hypophosphites is directed to be made by adding the ordinary nitric solution of molybdate to a hypophosphite solution, and then a very little sulphurous acid. A blue precipitate is said to result, or, in very dilute solutions, a blue colour deepened on shaking or gently warming. This test has been recommended by Millard,[†] who states that the characteristic blue colour of the test, which is due to the reduction of the colourless MoO_3 to the blue Mo_3O_8, is intensified by warming; the strongly acid reagent is directed to be used, and a few drops of sulphurous acid solution.

It is noteworthy, however, that water acidulated with hydrochloric or sulphuric acid gives with ammonium molybdate a faint indication of blue which might be mistaken for traces of a hypophosphite. Still more important is it to note that sulphurous acid solution gives a blue colour with a solution of ammonium molybdate. It should not, therefore, be used in performing the test. Again, a solution of a hypophosphite gives with ammonium molybdate solution a blue colour, without warming, if left standing overnight.

APPROXIMATE VALUATION OF IMPURITIES IN CHEMICAL SUBSTANCES.—The following simple method has been adopted in this laboratory for finding out approximately the amount of impurity present in chemical subtances during qualitative testing. It has already been recommended in the last report on solubilities[‡] that in general qualitative testing 10 C.c. of solution, containing 0·5 Gm. of the substance to be examined, should be used for each test. Having adopted this plan it only remains to keep ready a series of solutions containing definite quantities of well-known impurities. Thus, in testing for sulphates, if the addition of hydrochloric acid and barium chloride indicates their presence, a definite quantity of the standard sulphate solution is made up to 10 C.c. and the same reagents added. A few trials are sufficient to obtain a precipitate of as nearly as possible the same depth as that in the first case. The strength and the quantity of the sulphate solution being known, the approximate quantity of impurity present in the salt is easily calculated. It is convenient to make the standard solutions of such a strength that each cubic centimetre represents a certain percentage or decimal fractional percentage of impurity in the substance. In the case of SO_4'' each C.c. might contain one centigramme or milligramme of SO_4''. Suppose 1 C.c. = 1 Cgm. SO_4''. Then if 1 C.c. of this solution, made up to 10 C.c. with distilled water, when treated with suitable reagents, gave the same depth of turbidity as the 10 C.c. of solution containing 0·5 Gm. of the substance to be tested, when similarly treated the approximate percentage of impurity is easily calculated. Thus, 0·5 Gm. substance = 1 C.c. SO_4'' solution = 0·01 Gm. of SO_4'' as impurity.

Hence 100 Gm. substance contain $\frac{0·01 \times 100}{0·5} = 2$ Gm. of SO_4''. The substance therefore contains 2 per cent. of SO_4''.

INTERACTION BETWEEN MAGNESIUM SULPHATE, PHENAZONE, AND SODIUM SALICYLATE.

BY W. J. UGLOW WOOLCOCK.

In response to Mr. Gilmour's request (*P.J.*, January 11, 1902) the experiments made by him on the compound formed on dispensing the prescription there referred to were repeated and confirmed; others were also undertaken in order to ascertain the composition of the deposit. The prescription was first dispensed exactly as written, with the exception that the potassium bromide and glycerin were omitted, as it had been already proved that they took no part in the reaction; it was afterwards prepared with half the quantity of water in order to secure a better yield of the crystals.

Each ingredient was separately dissolved in the water, and the solutions then mixed and the mixture allowed to stand overnight. The crystals which separated were then washed till free from sulphate, and dried under 100° C. That these really were a compound of magnesium, phenazone, and salicylic acid was then proved as by Mr. Gilmour. A qualitative experiment showed that the residue left on incineration consisted of magnesium oxide. A gravimetric determination of the amount of magnesium present was therefore carried out; a weighed quantity of the substance was incinerated in a crucible, and the residue weighed as MgO. Owing to the relatively small amount of Mg present, it was considered desirable to work with not less than 2 grammes of the substance for each determination. The mean result of three experiments showed that Mg was present to the extent of 3·79 per cent. On looking up the literature of the subject it was found that in the *P.J.*, January 29, 1898, reference is made to three compounds of antipyrin with a metal and a salicylate—

$$3(C_{11}H_{12}N_2O)\ 2[(C_6H_4OHCOO)Fe]$$
$$3(C_{11}H_{12}N_2O)\ [(C_6H_4OHCOO)Ni2H_2O]$$
$$2(C_{11}H_{12}N_2O)\ [(C_6H_4OHCOO)Co].^*$$

In the *Journal of the Chemical Society*, 1900, II., 57, there is an abstract from a paper in the *Bull. Acad. roy. Belg.* [iii.], 37, 135-139, which divides this class of compounds into four divisions, placing the iron compound in one and the cobalt, nickel, manganese, and magnesium compounds in another. It seems probable that these crystals are a compound similar to the above, though the percentage of magnesium found does not agree exactly with any of the above formulæ in which magnesium is substituted for the other metal.

With regard to Mr. J. H. Shuttleworth's contention (*P.J.*, January 18, 1902, page 50, and *P.J.*, 1899, page 332), that the substance is salipyrin (phenazone salicylate), there is absolutely no doubt that the crystals contain a definite percentage of magnesium, and not a trace as he suggests; two batches of them were made, and each contained (within experimental error) the same percentage of magnesium. Further, they differ from salipyrin in their solubility in alcohol, being sparingly soluble, whereas salipyrin is soluble to the extent of 1 in 4 of 90 per cent. alcohol.

I am indebted to Mr. Harold Wilson, B.Sc., for the opportunity of carrying out these experiments, and for help in arranging the matter.

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[*] Attfield's 'Chemistry,' p. 402.

[†] *Pharmaceutical Journal* [3], **19**, 585.

[‡] Greenish and Upsher Smith, *Pharmaceutical Journal* [4], **12**, p. 775.

[*] The formulæ appear to have been incorrectly reproduced. Probably they should be $(C_6H_4OHCOO)_2Ni$. $(C_6H_4OHCOO)_2Co$. But it is still more likely that the deposit observed by Mr. Gilmour is a mixture of salipyrin and magnesium salicylate.—[ED. *Ph.J.*]

PHARMACEUTICAL EDUCATION.*

BY G. T. W. NEWSHOLME.

President of the Pharmaceutical Society of Great Britain.

With Mr. Paterson, I think the question of bringing a systematic training in pharmaceutical subjects within the reach of students during the term of their shop pupilage is one worthy of earnest consideration, but I am scarcely prepared to say that the triple

Subsidising of Schools

by Government, the Pharmaceutical Society, and local associations is the wisest course of accomplishing the object. At any rate, it appears to me to be a little premature to consider details in regard to the establishment and maintenance of additional schools of pharmacy in provincial centres just at present, for as yet no evidence of a definite course of training is demanded of candidates for the qualifying examination, and I have had sufficient administrative experience to teach me that to rely upon students imposing upon themselves a voluntary curriculum is mere trusting to a broken reed. A voluntary curriculum has been officially recommended by the Society for years—you will find it in the Syllabus of Subjects for the Minor Examination :—

> The Council of the Pharmaceutical Society recommends that all candidates, before presenting themselves for examination, should receive a systematic course of instruction occupying a period of not less than six months, and that such period of study should include *at least* sixty lectures in Chemistry, eighteen hours' work in each week in Practical Chemistry, forty-five lectures and demonstrations in Botany, and twenty-five lectures and demonstrations in Materia Medica.

Many local associations (Sheffield amongst them) have loyally expended time and money in arranging for a systematic course of instruction on those lines, to be furnished to students at a nominal cost; but in how many cases have the efforts proved a success—even when helped on by grants from the Pharmaceutical Society? I have in mind more than one instance in which efficient class arrangements have been made in connection with university colleges or similar institutions; but the pharmaceutical student has not shown himself anxious to embrace the opportunities specially offered for his benefit. Why should he? There may be difficulties in the way of his doing so (even if he were so inclined), arising from the conditions of his pupilage—I use this term in place of "apprenticeship," for I foresee the extinction of that professional custom in the near future — his long hours, for instance, or the disinclination of his parents or guardians to spend more upon his qualification than is absolutely needful. He is, therefore, encouraged to save himself up for a three months'

Fierce Preparation for Examination,

and can hardly be blamed for considering such a course of procedure more economical than a three years' organised and progressive education in the subjects that lie at the root of his life's work. Now, I don't say this in disparagement of Mr. Paterson's scheme, but my point is that the establishment of schools of pharmacy in every village in Great Britain will not remedy the evil of which I see painful evidence every session on the Board of Examiners. The conditions now existing are inimical to the success of an ideal organisation of pharmaceutical education in Great Britain, and this has been recognised by the Privy Council visitors to the examinations, and commented upon by them annually for the past twenty years. Change those conditions, and you change the character of the training of students throughout the country; establish a demand for real systematised study, and the supply will inevitably follow. The schools of pharmacy now in existence are much more admirably equipped and conducted than they were twenty years ago; they have developed side by side with the development of the standard and character of the examinations, and there is reason to suppose that the process of evolution would cease if we could secure

A Compulsory Curriculum.

The time has happily gone by when the curriculum was considered to be the subtle device of a Machiavelian President for feeding the Society's School of Pharmacy, and I may venture to say that most metropolitan and provincial schools recognise now that the policy of a compulsory course would be as great an advantage to properly organised schools as to the students who attended them. My view, then, is: curriculum first, and attention to schools afterwards — demand before supply. I am, of course, aware that it is sometimes possible to induce a "want" by indirect means.—Well, in that respect, I claim that the Council of the Society has done a good deal in recent years by maintaining a higher standard in its examinations, as well as by leavening the Boards of Examiners with teacher examiners; but, in my opinion, the indirect method alone is only practicable to a certain point, and this point seems to have been reached. Examination and education should bear a definite relation to each other, and they cannot be advantageously considered apart in a calling like pharmacy. With regard to

The Question of Grants,

I must confess that I am old-fashioned enough to prefer self-help to subsidy, whether it be in matters pharmaceutical or national. The tendency of the modern citizen seems to be to look to the State for aid in almost all the affairs of life, and I view with some apprehension the manifestation of similar ideas in pharmaceutical politics—the growing expectation of chemists and druggists, for instance, that the Council should do for them what they ought to do for themselves. This sort of thing is destructive of self-reliance, and if the pharmacist of the future is to raise himself in the public estimation, he must possess a strong individuality. Mr. Paterson's claim that pharmacy receives nothing from the large expenditure of public money on technical education does not impress me very greatly: nor does his enumeration of the trades benefiting from such source. I do not find that medical education is particularly favoured in regard to Government grants, and we like to call pharmacy the "handmaid of medicine." If the definition of "technical instruction" leaves out the one, it will probably not include the other. Moreover, in the "trades" enumerated I find no privileged or semi-professional class like that of chemists and druggists. But what I do notice, however, is that several county councils offer scholarships in science subjects which now figure in our examination syllabus and would form part of the pharmaceutical curriculum, if there were one. No one has suggested that our students would be debarred from competing for these, so that it seems possible, even now, that anyone who cares to devote the necessary time to a science course as a part of his pharmacy training may do so by the aid of money granted for technical education. It is also admitted that some benefit is derived from classes in botany and chemistry established under the grant, but that such benefit is small. Of course it is—that is just my point. The classes will spring up right enough when there are students, and there will be students enough when

A Definite Course of Instruction

is enforced as a condition precedent to examination. Let us not forget, too, that the primary object of the voluntary society was to promote education, and this it will be perfectly well able to do without public money; but I am quite at one with Mr. Paterson in believing that we should seize hold of any advantages which the new Education Bill may afford for increasing the facilities at present open to our students. The Law and Parliamentary Committee will no doubt keep a watchful eye on the subject, and I can promise that Mr. Paterson's views will receive the careful attention they merit.

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* Letter read at a meeting of the Sheffield Pharmaceutical and Chemical Society, on Wednesday, January 29, 1902.

PHARMACEUTICAL EDUCATION.*

BY JAMES GRIER.

Pharmaceutical education is a subject which, as a rule, interests the ordinary pharmacist just about as much as elementary education interests the general public. In both cases the many are content to be legislated for by a select few: that may be flattering to the select few, but cannot be good for the body pharmaceutical. Considering that education is the corner stone of British pharmacy and that the personal qualification or education of the pharmacist is the safeguard of the public, this apathy on the part of pharmacists is at first sight surprising; but it is readily enough explained by the unremunerative character of the pharmacist's calling, which has the effect of making him think that the game is not worth the candle and that this cry of a more thorough education is a case of "much cry and little wool." Occasionally in the journals someone to whom the subject has specially appealed gives the calling the benefit of his views on the subject, but it is rarely that it meets with any response, and the spasmodic effort dies out without having achieved any result. It is only when brought into prominence by some other matter—as, *e.g.*, the present scarcity of apprentices—that any general interest is created. The raising of the standard of the Preliminary Examination was at first roundly condemned; it was credited with being the cause of this scarcity of apprentices, but more mature consideration demonstrated to pharmacists that this, while it may be the apparent, is certainly not the real cause of the trouble. For if one may judge from discussions which have been held all over the country—even if they have been carried on by the select few—pharmacists are now convinced that the new standard of preliminary or scholastic education is none too exacting for those who intend becoming pharmacists. The increased stringency refers almost solely to the mathematical part, and every teacher of pharmacy knows that the young men who pass through his hands are very deficient in ordinary arithmetical processes, to say nothing of the higher portions of matriculation mathematics, which they now require in order to understand the science subjects of the Minor Examination. Any return to the old standard would be a retrograde step, and would not be fair to the students themselves. The present standard is the minimum which a student needs in order to tackle the scientific and technical subjects of the qualifying examination, and a lower standard of general education would necessitate a corresponding lowering of the qualifying examination and nothing short of the abolition of the Major Examination. It has been said that only boys with a grammar school education will be equal to the increased Preliminary, but that I am not inclined to believe. I see no reason why our higher grade Board Schools should not prepare boys for those examinations accepted by the Council of the Pharmaceutical Society. The Central Board School of this city does prepare boys for the entrance examination of the Victoria University, and, from inquiries which I have made, the other higher grade Board Schools are already capable of preparing boys in all the subjects of the Preliminary, except Latin which would require to be taken as a special subject. Higher grade Board Schools seem to be dominated by South Kensington, and the higher or secondary education which they give relates solely to the subjects of the South Kensington Science and Art Syllabus. Latin is not one of these subjects, and the teaching of Latin is neglected for the simple reason that it brings no grant. This is not as it ought to be. Board Schools are supposed to give free education, and they ought not to be dependent on the earning of grants by their scholars, else we may have the spectacle of a boy taking second stage mathematics, which includes trigonometry, and yet be very deficient in languages and literature, or specialising in physics or chemistry and deficient in mathematics It is not unusual for a pharmacist to engage an apprentice who has got a smattering of chemistry in this way, but who is wofully deficient in English and arithmetic. Witness the report of the examiners in the last competition for the Manchester Scholarship, where out of six candidates not one could do an arithmetical sum correctly. Specialising is out of place in elementary schools, and I venture to say that if the senior scholars were systematically prepared for the Victoria University Preliminary, or some similar examination, in general knowledge, it would be more to the point, and prove of more practical and lasting value to the boys themselves than any number of South Kensington certificates. They would then have a groundwork on which to build subsequent scientific or technical knowledge. Even private grammar schools are not beyond criticism, and I know of one not fifty miles from here where the subject of geography has never been taught. Of two clerks who were educated at a well-known institute in the same district, one thought the Dardanelles were islands, and the other mountains in America. This is hardly creditable to the schools of a world-wide Empire. If any pharmacist be still unconvinced on this subject of the Preliminary, I may mention for his benefit that many of the young ladies who are taking the lower apothecaries' assistants' qualification have had a high school education, although in their case no examination in general knowledge is required, and it behoves us to see to it that those who take the higher qualification of the pharmacist are not inferior to them in general education.

Coming now to the subject of apprenticeship, I think it necessary that an apprenticeship of four years should be served, and I do not think that any training in school or college can take its place; but, of course, all pharmacists are not in a position to train an apprentice. The days when the apprentice was expected to do the menial work of the shop, and even of the house, are gone, and it is as well. Some chemists do not take apprentices at all now, but engage a girl to put up stock and a boy to go the errands, and this is certainly more honourable than engaging an apprentice and making no effort to train him. Badly-trained apprentices must of necessity be a danger to pharmacy, whether they are the products of the pharmacy, the doctor's shop, or the drug store. Mr. Gilmour, in his interesting paper on the Glasgow doctor's shop, shows this very clearly. The druggist's assistant who has been properly trained suffers in consequence of this unfair competition of unskilled labour, while the occupation or calling of the qualified pharmacist is at the same time depreciated in the eyes of the medical profession and the public. In view of these things the suggestion of Mr. Sutherland that "the Pharmaceutical Society ought to define to the trade the things that are necessary to be taught during apprenticeship days" is worthy of careful consideration. Another and very important matter for the apprentice is the study to be done during apprenticeship days. No greater mistake can be made than that of putting off all study until the age of twenty or twenty-one and then expecting that somehow or other the knowledge will come during the six months spent at a school of pharmacy. It is not merely that the student has wasted valuable time, which is bad enough, but, what is much more serious, he has lost the habit of study, and has to fall back on cram. Knowledge, like most other things that are worth having, must be patiently courted, and if the apprentice would quietly follow out a systematic course of study, if for no other reason than to keep this faculty of study from becoming dormant, he will find the subjects of absorbing interest. It will develop his intelligence, and make the work of the shop more interesting day by day, and when he does enter a school of pharmacy he will be able to take full advantage of the course from the very first, instead of floundering in the shallows for the greater part of the session. In order to achieve this happy result, it is absolutely necessary that the apprentice should be allowed time for study, and, if he should be so favourably situated, permission to attend local classes. Presuming that the apprentice has passed his Preliminary Examination in general knowledge, and has been registered as an "apprentice or student," he should in his first year, being then fifteen years of age, take the elementary stage of mechanics, if not already taken in his Preliminary, at one of the many technical schools to be found all over the country. In his second year elementary inorganic chemistry (theoretical and practical), and the alternative physics course of the Science and Art Department may be studied. In his third year elementary botany and organic chemistry, and in his fourth year advanced inorganic and organic chemistry. Of course, these might be spread over a longer period. This is really not so terrible as might appear at first sight, in proof of which I may mention that as far back as 1884 it was quite common for assistants and apprentices in Edinburgh to study these subjects at the Heriot-Watt College evening classes, and I myself had secured Queen's prizes in advanced inorganic and organic chemistry, theoretical and practical, before I began studying for the Minor at all. Possibly to this may be attributed the higher percentage of passes in Edinburgh as compared with London. In March, 1880, Mr. John Mackay, one of the founders of the North British Branch, wrote Dr. Attfield that more than twenty years prior to that date he had suggested that pharmacists in Scotland should have a special clause in all indentures obliging parents and guardians of apprentices to pay for the attendance of each pupil at a full course of materia medica, chemistry, and botany, the employer being bound on his part to give the requisite time for so doing, and that, personally, he himself had carried this out in every case.

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* Read before the Manchester Pharmaceutical Association, on January 29, 1902.

It is positively painful to meet with students again and again who have never opened a book on chemistry, botany, or physics, who have not even the most rudimentary ideas on these subjects, but who nevertheless expect to assimilate the enormous amount of material required for the Minor Examination in the few months they are at college. Nature will not be forced in this manner, and the result is seen in the heavy failures, amounting to 75 per cent., roughly speaking, in London, and from 50 to 60 per cent. in Edinburgh.

With regard to the Qualifying Examination, I am strongly in favour of dividing it into two parts. The number of subjects and the enormous amount of detail which the candidate must bear in mind at one time are out of all reason, and to this also must be attributed in no small degree the large number of failures.

This division of the Minor is strongly recommended by both teachers and examiners, and the only question is as to the best method of dividing it. There can be very little doubt that the separation of the purely scientific from the more technical subjects is the best division; indeed, I am in favour of an intermediate examination in the purely scientific subjects—viz., chemistry, physics, and botany, including both theory and practical work, before proceeding to the qualifying examination. I would go even further than that, and say that a candidate who has studied those subjects at a recognised technical school, and has obtained first or even second-class (science and art) certificates in all of them, should be excused that part of the examination. A similar exemption would be made in the case of those who had passed the inter-science examination or the class examinations in these subjects at a University College. The Pharmaceutical Society now accepts certificates in general knowledge from other examining bodies in lieu of the old Preliminary, and I am of opinion that the extension of that principle to the qualifying examination would be of great advantage to the student and to pharmacy in general. A young man, for example, who had during his apprenticeship gone through a course of study such as I have described, and had obtained science and art certificates in elementary mechanics, if not taken in the Preliminary, in the alternative physics course, in advanced inorganic chemistry (theoretical and practical), in organic chemistry (elementary), and in botany (advanced), might, I think, be held to have passed in those parts of the examination.

He would then only require to take in his qualifying examination—(a) Pharmacy, including practical pharmacy and dispensing, prescription reading, posology, and pharmacy law; (b) materia medica and pharmacognosy; (c) pharmaceutical chemistry—*i.e.*, the identification, estimation, and examination for impurities of all B.P. drugs, including assaying. To this might be added a knowledge of poisonous and fatal doses and of antidotes. I think it would also be an improvement to have a written examination, followed by a short oral, where necessary, and the practical work.

Such a division of the Minor would be of the greatest benefit to all concerned—(1) It would ensure that the subjects had been properly studied and so do away with cram, because no science and art certificates can be awarded without attendance on classes for a full session. (2) There is here no compulsion. The student can make his own arrangements as to when and where he studies, and he can take just so much as he finds he has leisure for. In this way he cannot fail to obtain a thorough and intelligent grasp of those sciences, a real knowledge of which is becoming more and more a necessity to the pharmacist. (3) Such a system would do away with the absurdity of teaching a man in materia medica that aconitine is acetyl benzoyl aconine, or that cocaine is methyl benzoyl ecgonine—in other words, trying to make him understand the most abstruse problems in organic chemistry before he has grasped the simple elementary facts of inorganic chemistry. Division of the Minor is urgently required in the interests of pharmaceutical education: so the Pharmaceutical Council ought to take it in hand at once, and not, Micawber-like, wait for something to turn up. There is no need in this case to whistle for the wind, as the principle is already conceded for external examiners—that is, men who are not qualified pharmacists even now conduct this part of the examination. Another effect of this division of the Minor would be that the examiners would have a better opportunity of ascertaining a candidate's fitness or otherwise. There is too great an element of luck in the present Minor Examination, and as a means of sifting the good from the bad it is by no means perfect. Instances could be given where coolness and confidence have enabled an indifferent man to pass, while the want of them caused a much better man to fail. The best student of the year in the pharmaceutical department of a University College which is famed the world over for its scientific teaching failed last July in chemistry. That man had done exceptionally well in all the College examinations, had scored 100 per cent. in intermediate organic chemistry, and secured the class prize; had obtained a first-class in intermediate inorganic chemistry (theory), and 78 per cent. in practical. In the subjects of pharmacy and dispensing in materia medica and pharmaceutical chemistry he had won the class medals, which are only awarded if the candidate secures 75 per cent. in both theory and practical work. The cause of his failure is still a mystery, for on presenting himself again in October he not only passed, but was informed that he had secured practically full marks in every subject. On the other hand, a young man who had had no actual experience of dispensing and whose lack of knowledge of that subject was apparent enough to elicit strong remarks from the examiner, nevertheless passed first attempt at the same examination. This uncertainty of the examination has made the Minor a byword. "I can guarantee no young man getting through the Minor, no matter how well up he is," one teacher tells his students. "You have no chance of passing," says another, "unless you are well up, and if you are well up you will be lucky to get through."

A rather absurd feature due to the present method of conducting the Minor examination is the alternate passing and failing of a candidate in the same subject—*e.g.*, a student failed from the "Square" last July in his theory (second day). To make assurance doubly sure, he was coached for the October examination, and this time failed in practical, in which he had apparently satisfied the examiners in July, and so the game may go on to the third and fourth attempt. It is no easy matter for a candidate to keep up to examination pitch in all the subjects required at present, and in not a few cases his health gives way under the strain. The hardship will become more accentuated if the suggestion of holding the examination semi-annually be carried out, and division of the Minor will become more than ever a necessity.

It is not uncommon for candidates to keep going up periodically, first from one school and then from another, for a period of twelve or eighteen months, or even more. Only the other day I heard of such a case, where the young man is said to have cost his parents altogether about £200, a sum almost sufficient to pay for the five years' medical curriculum, and more than sufficient for that of the dentist, veterinary surgeon, or professional chemist. In view of these facts, it is interesting to note that the Queensland Board of Pharmacy appointed a commission last May to devise a scheme for the introduction of an intermediate examination on the ground that the Board's examination is growing too large for the examinees to take the whole of it at one time, evidences of the strain imposed by the extent of the examination having been noticed in the examinees (*Chemist and Druggist*, July 13, 1901). The same effects have been noticed here. The present system has a demoralising effect on the students, and in their interests, no less than in the interests of the Society, this state of affairs demands the immediate attention of the authorities at Bloomsbury. Surely they have no conception of the hatred and bitter feeling which is being engendered in the minds of young men, who may have come to the conclusion that they are regarded simply as a source of necessary revenue. This being so, the Society would really gain in loyalty and in the number of its adherents by relegating its examining powers to outside bodies like the University Colleges, but so long as it is so dependent upon the fees of the examinees it is unlikely that it will take that step unless it be that Clause 7 of the latest projected Pharmacy Bill foreshadows something of this kind.

With the object of ascertaining the cause of the large percentage of failures, I asked one of the College professors if he found the pharmacy students inferior in ability to the others? His answer was ready and to the point: "By no means," he said. "Some of my best students have come from the pharmaceutical department, and I find them good workers and interested in their work." This is borne out by the results of the College class examinations, pharmacy students having on several occasions gained the class prizes in open competition with the other students of the College. Our experience at Owens College is not so valuable as it might be because of the limited amount of support we have received.

During the five years I have been in charge of the Pharmaceutical Department, the number of students has never at any time exceeded a dozen, but our results are, on the whole, of an encouraging nature. It is difficult to account for this apathy on the part of pharmacists towards the University Colleges, as it would obviously be to their advantage in every way to be associated with them. (1) Students would have the advantage of professors who are specialists in their respective subjects, and it requires no demonstration to show that this method ensures a more efficient teaching than when all subjects are taken by one teacher; (2) the constant intercourse with students who are studying the same subjects, but from different standpoints, is an education in itself, and the mutual intercourse between pharmaceutical and medical and dental students could not but be productive of the best results to all three. The responsible nature of the pharmacist's calling would be better appreciated by medical men, teachers, and the public generally, very few of whom have any idea of the extent of the training which is necessary in order to become a pharmacist. Finally—and this ought to appeal to you as business men—pharmacy would share with medicine and dentistry in the annual grant of £25,000 which is made to the University Colleges, so that by utilising technical schools during apprenticeship and the University Colleges, later on in preparing for the Qualifying Examination, pharmacists would share to the fullest extent in the grants which Government gives in aid of secondary and University education, as well as in any corporation or city grants. Surely even Mr. Jas. Paterson could not wish for more than this. In short, gentlemen, local pharmacists have, in the Owens College, an institution of which they have so far failed to avail themselves, except to a very limited extent, and I am open to state that, had they lent their support, there is every reason to believe a degree for pharmacists would by now have been an accomplished fact. As it is, the College authorities would welcome any advance and any suggestions on the part of pharmacists, but they can hardly be expected to move in the matter unless assured of a certain measure of support. In this connection it is interesting to note that the New South Wales Board of Pharmacy requires apprentices to attend the lectures in botany, materia medica, and chemistry (including practical) in the Sydney University, and to pass the University examinations in those subjects. The law compels the master to give his apprentice time for that during the last year of apprenticeship, and it is pleasant to note that pharmacists there generally approve of the step taken. Contrast with this the attitude of British pharmacists. One would think they were ashamed of their qualification. Their sole object seems to be to get through the examination in the shortest possible time with the minimum amount of trouble, but, as in many other cases, the short cut too often proves a long and laborious way. Considering that only 25 per cent. pass the Minor, and that of these the large majority have to present themselves twice, thrice, or even oftener, it would surely be more advantageous, and would certainly cost no more, to enter for a nine months' course at such an institution as I have described.

How can pharmacists hope to gain the respect of the medical profession when cases like the following are possible? A doctor who holds an appointment in the medical school prescribed the following lotion:—

℞ Acid Carbolic Liq. .... ʒiss.
Liq. Plumbi Subacet .... ʒii.
Aquæ..............................ad ℥x.

The chemist, ignorant of chemistry, mixed the first and second ingredients instead of diluting each separately with water before mixing, and sent out the lotion with the carbolate of lead forming a sticky mass in the bottom of the bottle, so that the patient was to all intents and purposes using plain water as the lotion. Such is the natural result of the present "cram system. Other instances can be given.

There is no getting over the fact that many medical men regard with suspicion and have very little faith in the quality of the training which the ordinary pharmacist of the present day receives. They can see no guarantee that this training is efficient and sufficient, and look upon the passing of the present Minor Examination by itself as very doubtful evidence of such training. It is my experience in discussing matters with them that they can give instances of inefficiency where their prescriptions have not been satisfactorily compounded, and thus one badly-trained pharmacist may prejudice a medical man against pharmacists in general. Many of them are quite equal to anything they may be asked to do; but it is not sufficient that many, or even the majority of pharmacists, are well-trained and capable. They must be able to guarantee that all pharmacists, without exception, have had a thorough and systematic training at a school of pharmacy recognised and approved by the Pharmaceutical Society. The more closely we associate ourselves as pharmacists with the other branches of the healing art, the more is the vexed question of dispensing for the qualified pharmacist and prescribing for the medical man likely to be satisfactorily settled. I am not inclined to think that this question is so hopeless as it appears; indeed, there are distinct indications that the General Medical Council is likely to move in that matter. My own view of the subject—although I am not sure that it will find favour in official quarters—is that pharmacy ought to be under the same controlling authority as medicine and dentistry. My idea is that pharmacy should be represented on the General Medical Council along with medicine and dentistry, and that the representative body, which it would then be, should have control over all three, so far as unprofessional conduct was concerned. There would then be some chance of a comprehensive Bill being drafted, dealing with the whole subject of medicine, dentistry, pharmacy, and midwifery, which are all intimately related to each other and ought to be considered together. The trade aspect of the chemists' calling would not concern that representative Council, only the professional. It might then even be possible to come to some understanding with the Society of Apothecaries, so as to get the pharmacists' qualifying examination recognised as the only legal qualification for the dispensing of physicians' prescriptions.

We have no wish to prevent any doctor dispensing his own medicines if he so choose, but what we do object to is when, not having the necessary time himself, he relegates that work to his wife, his housekeeper, his coachman, or any other unqualified person who may happen to be handy. We would like to see surgeries, doctors' shops, and all other places where medicines are dispensed, subject to the same laws and regulations as the pharmacist's shop. The safety of the public requires that this should be done.

I have not attempted to deal in this paper with the higher education of the pharmacist, but have simply confined myself to the preparation for the legal or qualifying examination. With regard to the Major, I am quite aware of the fact that the additional knowledge which one gains is itself a reason for going on to that examination, but I am also of opinion that for all practical purposes the Major has served its day. If division of the Minor should come about, a fuller knowledge of the subjects will be required, and the most useful features of the Major—viz., pharmacognosy and quantitative analysis—could be incorporated without entailing any great hardship. Indeed, a qualified pharmacist ought to be able to perform any estimation of the B.P. (volumetric or gravimetric), and ought to possess a sufficient knowledge of pharmacognosy to examine powdered vegetable drugs. I also think it is only reasonable that a man who has passed the legal qualifying examination should be free to use the terms pharmacist and pharmaceutical chemist and call his shop a pharmacy. If this were done exemption from jury service would follow in virtue of the title.

To summarise:—A youth who wishes to become a pharmacist should first pass the Preliminary Examination in general knowledge and become registered as an apprentice or student. He should then serve an apprenticeship of four years, during which time he ought to be taught the elements of practical pharmacy and dispensing, the Society defining those things he must be taught. He should also be allowed time for study and permission to attend classes in botany, chemistry and physics, either day or evening, so that he may be able to present himself for the intermediate examination in these subjects, or obtain the group of certificates which would be accepted in lieu of such examination as evidence of satisfactory knowledge. He would then be in his twentieth year, and it would then only be necessary to spend six or nine months at a recognised school of pharmacy before presenting himself for the qualifying examination in pharmacy and dispensing, materia medica, and pharmaceutical chemistry; or, as an alternative, he may serve three years' apprenticeship and spend the fourth year at a University College, taking the subjects for Inter. B.Sc., including biology, and present himself for the qualifying examination in March of his second year at college. This alternative course would be specially useful for those who wish to go into the manufacturing or analytical departments of the wholesale and larger retail houses, also for those who wished to go on to a degree and qualify themselves for acting as public analysts in foods and drugs in conjunction with retail pharmacy. The advantage of such a course would be that the two years which are now spent in preparing for the Minor and Major Examinations, and at present count for nothing in going on to a degree, would then form part of the three years' course of study necessary for a degree in science, where pharmacy, including materia medica and pharmaceutical chemistry, would be accepted as one of the subjects for such degree.

I do not wish to go into this subject of a degree in any detail, but I may state that my senior colleague, Mr. Wm. Kirkby, who is one of the few authorities on pharmacognosy in this country, has, in conjunction with myself, worked out such a course, and it has been favourably considered by those members of the teaching staff of the College who are most closely associated with the pharmaceutical department.

The main thing now is the amount of support such a scheme is likely to receive from pharmacists, and whether their support would be sufficient to warrant the increased expenditure which the provision of adequate instruction would entail.

I am aware that there are very many chemists in whom this scheme awakens no interest whatever, who cannot see how education will increase their profits, and who would ask, apparently with reason, how they could possibly attend to the front shop and do analyses in the back as well. To those I reply: Who were the chemists of last century who made money and historic houses at the same time, and left names to be honoured by the present race of pharmacists? Was it not those who had the energy and foresight to institute and carry on laboratories in the back? Is it impossible to do what our forefathers did? Times change, and the pharmacist must change with them. Commercial developments have made it more economical for him in most cases to buy his preparations than to make them himself, but it has not necessarily robbed him of his laboratory if he will but adapt it to modern requirements. The Pharmacopœia indicates how. It has deleted the descriptions of the old manufacturing processes and replaced them with modern analytical tests. Let the "chemist and druggist" be true to his title—be a real chemist and fit himself to undertake the examination of food and drugs, which by reason of his training he should be specially fitted for. His charter gives him that right, and one cannot but be filled with regret when one thinks of the many brilliant men who have been lost to the Society because it has allowed the Institute of Chemistry to oust it from its rightful place.

It is my firm conviction that the salvation of the drug trade and the elevation of the pharmacist's calling are only to be effected by education—the pharmacist must grasp this fact clearly, unless he wishes to revert to a mere tradesman and retailer of other men's goods.

Since writing the above I have, through the kindness of Mr. Kirkby, had the very great pleasure of reading the pamphlet on "The Relation to Each Other of Education and Examination, Especially with Regard to Pharmacy in Great Britain" by our former revered teacher and editor of the present Pharmacopœia, Dr. John Attfield, and I am glad to see that the conclusions I had previously and independently arrived at, coincide in a very remarkable manner with those which Dr. Attfield worked out with so much skill and persuasive power now twenty years ago. If copies of the pamphlet are still to be had, I recommend its careful perusal to everyone interested in pharmaceutical education, and I cannot close my paper more appropriately than by quoting from two of the letters from the mass of opinions he so laboriously collected. C. E. Stuart, B.Sc., President of the Chemists' Assistants' Association, wrote, November 23, 1881:—"I feel that no increase in the amount of dispensing done by pharmacists can be expected to take place until it can be entrusted to a body of men more highly educated, both generally and technically, than the majority of those now engaged in pharmacy"—a statement which chemists generally would do well to take to heart. Thos. B. Groves, Weymouth, wrote, April 5, 1880:—"I am convinced that a compulsory curriculum would do more in ten years for the elevation of the social and scientific status of pharmacy than has hitherto been accomplished by the Pharmaceutical Society during its whole existence."

NOTES ON MEDICINAL PLANTS CULTIVATED IN GREAT BRITAIN.*

BY F. RANSOM, F.C.S.

The plants yielding medicinal products which can be profitably cultivated in this country are small in number compared with those that thrive in warmer climates. Although not numerous, they include some of our most powerful remedies and compare favourably in quality with the imported article.

To some pharmacists, whose experience is in the dispensing rather than the production of drugs, I believe that the cultivation of medicinal plants is regarded as an ideal occupation free from the cares and worries with which our profession is frequently attended. In the following notes I propose to remind you of a few facts concerning the more important plants and at the same time to bring before your notice some observations based upon practical experience. You will, I think, then perceive that this branch of pharmacy, although presenting some special features of interest, is quite as liable to cares and disappointments as most other occupations of this life.

Aconite.—The most potent of the British medicinal plants is the aconite. Although known to the ancients as a very poisonous plant and used by various tribes as an arrow poison, it does not appear to have been employed for medicinal purposes until the middle ages. Some plants belonging to the genus were known to the Greeks as "aconiton," but the various species do not appear to have been differentiated until comparatively recent times. The Greek word is probably derived from the town of Acone in Bithynia, in the neighbourhood of which the plant was, and still is, abundant. It has also been suggested that it may be connected with the Greek "acontion," a dart, from being used as a poison for this weapon. The common English name of monkshood refers to the characteristic arched sepal, which is frequently brought before the notice of the would-be pharmacist in the lecture theatre or the examination hall. Helmet flower is another synonym referring to the same characteristic. Wolfsbane, or wolf-poison, according to Gerard's 'Herbal,' is so called because "the hunters, which seeke after wolfes, put the juice thereof into rawe flesh, which the wolfes devoure and are killed," surely a rather unsportsmanlike practice on the part of the said hunters. The aconite has from early times been grown for ornamental purposes, and it was doubtless found in gardens in England long before it was cultivated for medicinal purposes. Like most other plants that have been long in cultivation, there are many varieties of *Aconitum napellus*, over sixty being known to botanists. These vary in the shade of colour of the flower, in the form of the leaf and in general growth. To what extent they may vary in therapeutic value is not known, but on medicinal farms it is usually attempted to keep as closely as possible to the type, although some variations are generally to be seen. The aconite is now generally described as indigenous, wild specimens being found in various localities in the country, but it is very probable that it originally escaped from gardens. Although described as a perennial plant, the term requires a certain modification as an aconite root really survives but one winter. In the autumn the tap-root, from which the flowering stem has been produced, dies away, and its place is taken by a younger root which has gradually developed from the parent during the summer and is destined to bear the flowering stem during the following year. Each root has therefore only one year's existence. In the last edition of the British Pharmacopœia aconite root is required to be obtained from plants cultivated in Britain, in order to ensure as far as possible the use of the correct species. When dried the British grown roots cannot however be always easily distinguished from those imported from the Continent, and as the price of the latter, being collected from wild plants, is much lower than the former, the market is still supplied largely with the foreign drug.

Belladonna.—As in the case of aconite, the medicinal properties of belladonna appear to have been only appreciated in comparatively recent times. The plant cannot with certainty be identified in the writings of any classical author. The usual derivation attributed to the name belladonna is its supposed employment in the middle ages to increase the brilliancy of the eyes of Italian beauties by enlarging the pupils. Some authorities state that a distilled water was obtained from it, which was used for the complexion. The generic name, *Atropa*, is derived from "Atropus," one of the three Fates, whose duty it was to cut the thread of life. The fruit of belladonna has a special attraction for children, and the rich black berries, with purple juice of a sweetish taste, have on several occasions produced fatal results. Gerard, oblivious to its medicinal value, but fully aware of its poisonous character, exhorts his readers to "banish, therefore, these pernicious plants out of your gardens and all places neere to your houses." Sir John Hill, in his 'Family Herbal,' remarks: "It may seem strange to mix a poison among medicines, but a part of this herb has its uses. This is a wild plant of a dull and dismal aspect." He also states that the leaves are the only part used, "they are good against the ringworm and tetters, and against hard swellings."

Belladonna is probably the plant most extensively cultivated in this country for purely medicinal purposes. Although indigenous and growing wild in some of the southern counties in sufficient abundance to induce collection, it has for many years been one of the favourite plants for cultivation. Being a perennial, and not so liable to destruction by insects and inclement seasons as some other plants, it requires less attention, and a crop is more certain. There is, however, evidence that during the last few years the supply has exceeded the demand, and the abnormally low prices at which the fresh herb, the root, and the green extract have been offered must have convinced many growers that they might have devoted their labour and land more profitably to the cultivation of crops of more general consumption. Belladonna is grown from seed sown in the early spring, and produces little if any herb worth cutting during the first year. During the second and third years the best results are obtained, and the alkaloidal value of the root is believed to be at its highest at about the third year. It has recently been pointed out that the English grown root contains more extractive than the foreign, an observation which I can confirm. This is not always an advantage; for the liquid extract in particular a root with less extractive and of average alkaloidal value is preferable. The imported root is, however, very variable in strength, and during the last season it has been increasingly difficult to obtain a sample rich in alkaloid, that is to say containing over 0·5 per cent.

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* Read before the Chemists' Assistants' Association, on Thursday, February 13, 1902.

The following table represents the percentage of alkaloid obtained in the ordinary course of business from thirty-four samples of belladonna root. It should be explained that the estimations were made from the resulting extracts, and not of the root itself, and, therefore, represent the yield obtained by the usual process of manufacturing the official preparations.

Alkaloid Extracted from Belladonna Root.

	Per cent.		Per cent.
(1)	0·62	(18)	0·40
(2)	0·55	(19)	0·47
(3)	0·56	(20)	0·38
(4)	0·46	(21)	0·45
(5)	0·46	(22)	0·33
(6)	0·50	(23)	0·58
(7)	0·50	(24)	0·46
(8)	0·53	(25)	0·49
(9)	0·35	(26)	0·55
(10)	0·58	(27)	0·42
(11)	0·44	(28)	0·57
(12)	0·27	(29)	0·32
(13)	0·43	(30)	0·31
(14)	0·70	(31)	0·34
(15)	0·43	(32)	0·45
(16)	0·29	(33)	0·31
(17)	0·62	(34)	0·43

It will be seen that the above vary from 0·27 per cent. to 0·70 per cent., and the mean of the thirty-four samples is 0·457 per cent. This affords strong evidence of the wisdom of the compilers of the last edition of the Pharmacopœia in introducing standardised preparations of belladonna, and thereby securing approximate uniformity in strength. At the same time it should be pointed out that preparations of uniform alkaloidal value obtained from a drug so variable in strength must vary much in colour and general appearance. It has been suggested that no root containing less than 0·4 per cent. of alkaloid should be employed, but even this would not secure uniformity in appearance, as the percentage of extractive is quite as variable as that of alkaloid.

Henbane has long been used as a medicinal agent, and it is curious that while belladonna was regarded, until within recent times, as of but little value, hyoscyamus, which possesses properties so similar in character, has been considered to be a cure for various ailments from a remote period. Many cases of poisoning are on record, but the results have not so often proved fatal as with aconite and belladonna. In Sowerby's 'English Botany' mention is made of a curious case described by Dr. Houlton, where, in a certain monastery, "the roots had been eaten for supper by mistake, the monks who partook of them were seized in the night with the most extraordinary hallucinations, so that the place became like a lunatic asylum. One monk rang the bells for matins at 12 o'clock at night; of those of the fraternity who attended to the summons some could read, others fancied the letters were running about like ants, and some read what they did not find in their books." Hyoscyamus is derived from two Greek words signifying a pig and a bean. It is said that the fruit was devoured with impunity by pigs, but it is questionable whether this was the species of henbane used in medicine. The English name, henbane, indicates that to poultry, at least, it was regarded as a poison. It is remarkable how the different parts of the plant have varied in esteem in different periods. During the middle ages the root and seed were generally used, but neither of these is now officially recognised. According to A. W. Gerrard, whose work on the subject is well known, the root of the biennial plant collected during the first year is the richest in alkaloid, and it is quite possible that this may again become official at some future time. The seed has, I think, rightly been discarded. I have myself examined it, but have been able to obtain very little alkaloid from it. It is questionable whether the second year's leaves and flowers of the biennial plant deserve the high reputation which they have obtained in this country, and from the experiments of Gerrard and others it would appear that the leaves collected from the plant during the first year of its growth are equally rich in alkaloid and suitable for medicinal use. *Hyoscyamus niger* is not essentially a biennial plant, as under favourable conditions it often develops and flowers during the first year. However carefully the seed may be collected, it generally happens that in a crop of henbane some of the plants grow up, flower, and die off during the same year that the seed is sown. During the summer of 1901, when the meteorological conditions were unusually favourable for rapid development, an entire crop in one field produced stems and flower buds exactly similar to the second year's growth, during the season. The British Pharmacopœia does not now specify that the leaf shall be obtained from plants grown in Britain, as in former editions. The imported leaf is probably collected indiscriminately from the annual and biennial plant, and as it is produced chiefly in Southern Europe, where the summers are warmer than in England, it is probable that the biennial plant is the exception rather than the rule. A careful examination of foreign samples will tend to confirm this view, although it is not always easy to determine the variety with certainty. There can be no doubt that better results have been obtained with the British grown plant, but this is probably chiefly due to the greater care with which the leaves are collected and dried. Much of the imported leaf arrives in very poor condition, and is probably often mixed with other species of hyoscyamus. I would suggest that instead of admitting the foreign leaf it would have been preferable to confine the use to the British grown plant, but to allow first year's biennial or even annual leaves to be used. Henbane is one of the most uncertain crops that are grown on medicinal farms in this country. Occasionally, scarcely a plant may be produced from an early spring sowing, and some years afterwards, when another crop is on the ground, the seed which has lain without germinating may be brought into activity by favourable climatic conditions, and an unexpected field of henbane, with other plants, result. Even when the seed germinates quickly and the young plants appear thickly in the rows, there is still much uncertainty as to the result. They are peculiarly liable to destruction by insects, and the promise of a good crop may in the course of a few days have almost disappeared. Even after the plant has developed favourably during the summer, and produced an abundance of first year's leaves there is still the danger that many of the roots may rot away during a damp autumn, and thus destroy the prospects for the second year. Several of the recent seasons have been peculiarly unfortunate for henbane, and for some months previous to the 1901 crop being collected the British biennial leaf was almost unobtainable from the growers, whose stocks had been mostly exhausted early in the season. The few holders who had bought early were able to obtain almost famine prices for their stock. It was probably this liability of the crop to failure that influenced the compilers of the Pharmacopœia in removing the restriction to plants cultivated in Britain, and allowing the use of foreign henbane, but if the first year's biennial and annual leaf were admitted home growers could probably ensure a sufficient supply.

Lettuce is still grown to a small extent for the preparation of the green extract, which was formerly official in the Pharmacopœia. The official extract was prepared from *Lactuca virosa*, an indigenous biennial plant which is not found in sufficient quantity in a wild state to collect in this country. The generic name, *Lactuca*, refers to the milky juice with which the plant abounds. Gerard in his 'Herbal' refers to several varieties of cultivated and wild lettuce as having sedative properties. The specific name, *virosa*, poisonous, appears to indicate that this species was regarded as the most powerful. Lactucarium, or lettuce opium, is the inspissated juice of this and other species. It has been produced to a considerable extent in the neighbourhood of Edinburgh, but the greater part is now imported from France and Germany. *Lactuca virosa* affords another example of a plant which is usually biennial, becoming annual in character under favourable conditions of climate and cultivation.

(*To be continued.*)

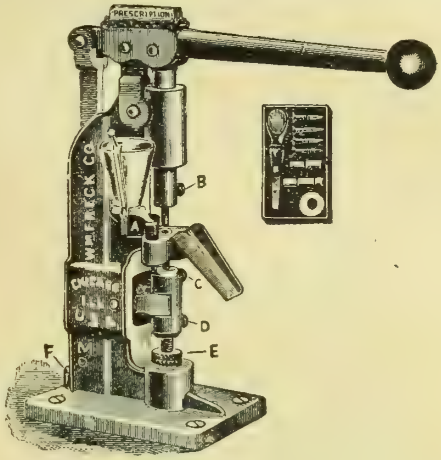
THE PREPARATION OF COMPRESSED TABLETS.

BY AN ORDINARY PHARMACIST.

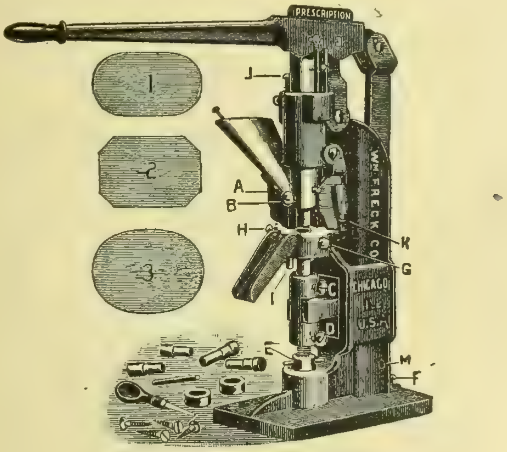
In the preceding articles* I have dealt fully with the preparation of material which is to be dispensed in tablets, the use and choice of lubricants, and the manipulation required in special cases. Attention has also been directed to the necessity of care in using tablet machines, and reference has been made to one particular machine which, among others, is particularly suitable for dispensing purposes. But there are many other tablet machines available, and I propose now to describe a few such machines which are being offered for sale in this country at the present time. Some of the machines described cannot be worked by hand and are, therefore, somewhat outside the scope of my notes, which have been especially compiled for the information of pharmacists who wish to make their own tablets for dispensing and ordinary sale purposes. While, therefore, brief particulars are given concerning a few power machines, attention is more particularly directed to machines of moderate size, which can be worked by hand, beginning with the prescription tablet machine mentioned in my first article.

The Freck Tablet Machine.

This machine is made in two sizes, the smaller costing 58s. and being especially designed for the double purpose of dispensing tablets ordered in prescriptions or for making tablets for general demand. The ingenious manner in which it is constructed gives it the same advantages as the best high-priced machines used for manufacturing purposes, and by its aid fairly large quantities of tablets can be made with comparative ease. The powder or material to be made into tablets is put into the feeder or funnel and the feeder moved over the die, which is filled automatically; the feeder is then moved back and the lever brought down, so compressing the powder. On raising the lever, at the same time raising the lower compressor in the die, the tablet is brought to the surface and discharged through the spout by the sweeping motion of the feeder, all the various movements being accomplished by once lowering and raising the lever, in addition to moving the feeder. The lower compressor is adjustable, by means of a screw, for making tablets of various thicknesses, and if once set will make tablets of perfectly uniform weight; it is also adjustable, so it will stop exactly even with the surface of the die, no matter how deep it recedes into it. Each machine has two sets of dies and compressors, making tablets of 9/32 in. and 3/8 in. diameter respectively, of any required thickness, and from half to ten grains in weight. Additional sets in sizes of 3/16, 7/32, 1/4, 5/16, 7/16, and 1/2 inch are supplied at 6s. per set. The construction of the machine is so perfect that the dies and compressors can be changed quickly and easily. For making large quantities of tablets a funnel is fastened on the feeder. That funnel is part of the machine, and is supplied with it. With regard to the capacity and size of the machine, 1 lb. of pressure on the lever gives 10 lb. of pressure on the tablet; the hardness of the latter is the result of this pressure, and tablets can be made "as hard as a bullet or as soft as pie." It is claimed that the machine will stand the pressure of the human body. It is 12½ in. high, occupies 4 in. by 6 in. counter or shelf space, and weighs 12 lb., and that it is capable of turning out 25,000 tablets per day.



The Freck (No. 1) Tablet Machine.



The Freck (No. 2) Tablet Machine.

The larger Freck machine costs five guineas, and is more particularly intended for making large tablets and lozenges up to 3/4 in. diameter, but the smallest tablets of one grain or 3/16 in. diameter can be made with it just as well. From one to four tablets can be made with each stroke on this machine, and consequently it has a larger capacity than many high-priced power tablet machines. In construction the machine closely resembles the smaller form, but its capacity is, of course, much greater. It is 17½ in. high, occupies 5½ in. by 8 in. counter or shelf space, and weighs 30 lb. all complete. Each machine has three sets of dies and compressors, making tablets of 3/8 in., 1/2 in., and 5/8 in. diameter respectively, of any required thickness, and from two to twenty-five grains in weight. Additional sizes of larger or smaller single dies can be obtained, also lozenge dies of exact shape and size as shown in the illustration, with rounded corners (No. 1), cut-off corners (No. 2), or oval shaped (No. 3), and multiple dies for making two, three, or four tablets with each stroke. The British agents for the Freck machines are Messrs. S. Maw, Son and Sons, London.

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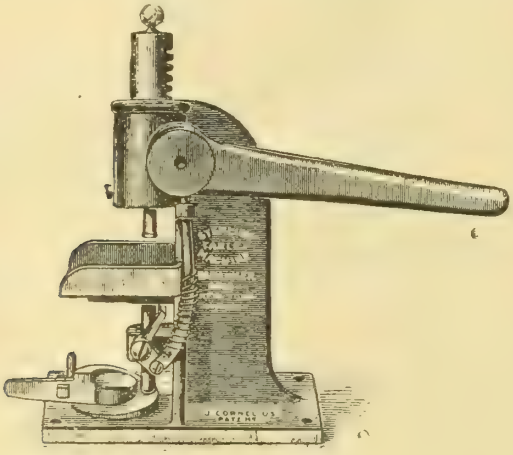
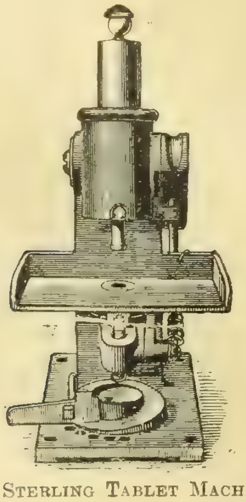
* See *Pharmaceutical Journal* for January 18 and 25, and February 1.

The Sterling Tablet Machine.

The Sterling tablet machine is designed for making compressed tablets in any quantity, and is especially adapted for use by pharmacists in dispensing prescriptions for tablets. It is claimed to be the simplest and strongest machine on the market, and, as the working parts are made of steel, it is capable of producing perfectly-made tablets of uniform weight and thickness.



The Sterling Tablet Machine.



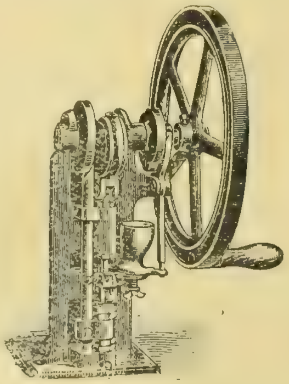
The Sterling Tablet Machine.

The depth of the recess in which the tablet is compressed is regulated by means of a cam, and the size of the tablet can be altered very readily. After weighing out the powder for one tablet and adjusting the cam so that the mould will contain just the amount of powder required, the tablets can be made of uniform weight and thickness by simply filling the mould to the top. The powder is compressed by steady pressure of the handle, and the tablet is delivered automatically below the die and not on the platform covered with loose powder.

The working parts of the machine are interchangeable, and will not break unless greatly abused. The dies and plungers are also kept apart at all times when not in use, so that they cannot rust in each other, and, with reasonable care, the machine will last a great many years. Each machine is supplied with two sets of moulds and plungers, making tablets respectively of 5/16 and 6/16 inch diameter and of any thickness required. Other sizes are made to order at a moderate cost. The price of the machine, with two sets of dies and plungers, is £1 12s. 6d., and the British agents are Messrs. Marshalls', Limited, 27, Red Lion Square, London.

The Eureka Tablet Machine.

A larger hand tablet machine is the Eureka, which is constructed on the same principle as power machines. It is strongly and gracefully built, also simple in construction, with no complicated parts liable to break or get out of order. Its action is entirely automatic. The shafts and plungers are turned from the best steel and polished. The rolls which run in the cams are hardened to resist wear, and all parts are carefully made and put together.

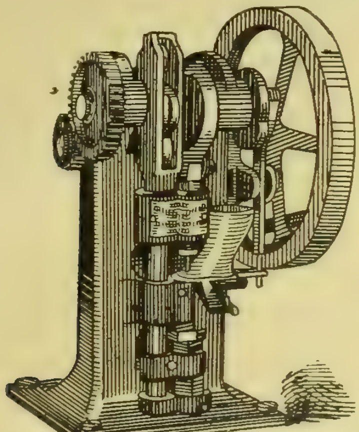


The Eureka Tablet Machine.

The machine stands 18 inches high, weighs 75 lbs., and will compress 100 tablets a minute with absolute accuracy. Three sets of punches and dies are supplied with each machine, to produce tablets 3/16, 1/4, and 3/8 in diameter, and other sizes can be supplied to order at a moderate cost. The price of the Eureka tablet machine is £7, and the British agent is Mr. F. Foster, 29e, St. Nicholas Street, Scarborough, who also supplies power machines of various sizes, as well as a larger hand machine.

This larger hand machine costs £20, including three sets of punches and dies, for making tablets up to 1/2 inch in diameter. It stands two feet high, weighs 275 lbs., and is capable of turning out from seventy to eighty tablets a minute. As in the case of the Eureka machine, extra punches and dies can be supplied as required, at a moderate cost and of any shape desired. This machine and the power machines supplied by Mr. Foster perform the required work automatically without the aid of springs, thus every motion is positive, and there is nothing to break or get out of order. This is an advantage to be appreciated by the operator, as springs are inaccurate, and a constant source of annoyance. The feeding cup, or hopper, has a shaking motion, which fills the die with absolute accuracy and minimum waste, and dispenses with any stirring attachment.

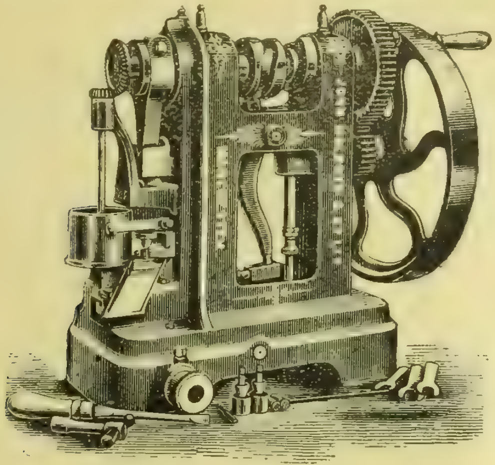
Such attachments are undesirable, as they powder the granulated material and fill the die unevenly in consequence. In operation but two adjustments are necessary, one for weight of tablet and the other for amount of pressure. One-eighth of a horse-power is sufficient to operate the larger machines, which range in price from £25 to £130.



The Foster (B) Tablet Machine.

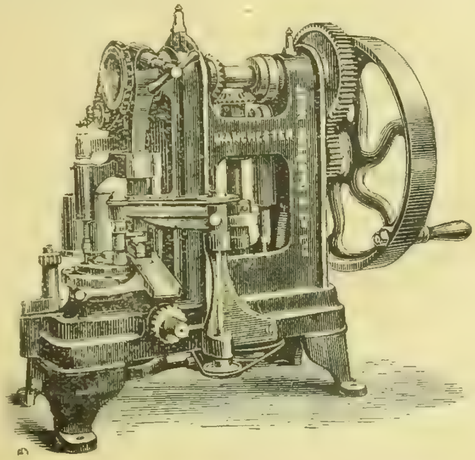
The Holroyd Tablet Machines.

The tablet machines manufactured by Messrs. John Holroyd and Co., Ltd., Milnrow, near Rochdale, are largely used by wholesale druggists in this country, the firm's list including particulars of machines suitable for all requirements.



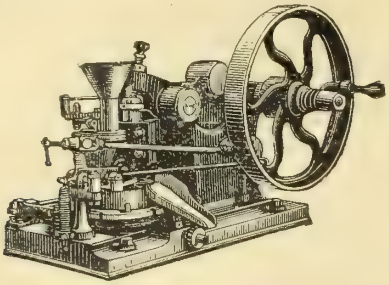
The Holroyd No. 5) Tablet Machine.

The No. 5 machine, which is specially designed for the requirements of a retail business, is worked by hand, and costs £35. It weighs about 2cwt., occupies a space of 12in. × 24in., and is capable of turning out forty tablets per minute, one tablet being produced at each impression of the top punch. The machine is very easily cleaned, and the punches can be changed in about three minutes. The body of the machine consists of a strong casting. A horizontal shaft runs at the top of the machine and carries all the necessary cams, etc., being driven through spur gearing, so as to obtain a power purchase from the driving fly-wheel. Though the machine is arranged for hand drive, it can be fitted for driving by power if necessary. Only one top and bottom punch are used in this machine, whilst the die fits into a suitable recess in a reciprocating slide. The bottom punch rests on a lever controlled by the cam nearest the gearing at the back of the machine, and when the tablet is being compressed this lever rests on the bottom plate controlled by the knurled head screw in the base of the machine, plainly seen in the front of the illustration. This latter therefore regulates the amount of material in the tablet, whilst the pressure is controlled by the stroke of the top punch. The movement of the top punch is by means of a crank pin at the end of the cam-shaft. This pin revolves in an eccentric bush, which can be revolved by means of a small worm, thus regulating the depth of the stroke and degree of compression. A bevel wheel at the extreme end of the cam-shaft keeps the material in the hopper well stirred. Immediately the tablet has been compressed, the bottom punch is raised by its lever so that its face lies flush with the top of the reciprocating plate, bringing the tablet up with it. The plate now moves towards the hopper, the tablet being caught by the chute immediately the movement commences. The bottom punch falls immediately the tablet has been carried away, and passing under the hopper the die receives its charge of material. The movement of the plate now reverses, bringing the die and bottom punch immediately under the top punch, after which another tablet is struck, and the cycle of operations proceeds.



The Holroyd (No. 4) Tablet Machine.

The No. 4 machine supplied by this firm can be worked by hand or power, and costs £50. It weighs about 2 3/4cwt., occupies a space of 18in. × 30in., and is capable of turning out forty five tablets per minute. In all the machines manufactured by Messrs. Holroyd and Co., except the No. 5 machine, a revolving bottom plate system is used, four or six punches being provided for in this plate, and the plate revolving step by step at each stroke. In this way the following cycle of operations is automatically performed:—The bottom punch farthest from the one in actual use is pressed down on to its seating, provided it has not already fallen by its own weight. It then passes under the hopper, and so collects the correct quantity of powder, after which it passes under the top punch, which compresses the powder to any required degree, and so makes the tablet. The next movement of the table or plate causes the bottom punch to rise in its seating until it is level with the top of the revolving table itself, and the tablet still remaining on the top of the bottom punch is swept down the chute as it passes round. All these four operations are going on simultaneously, and there is consequently no necessity to hurry the filling of the dies, in consequence of which practically no material whatsoever is wasted. In the case of the No. 2A machine, which costs £110, as many as two or four tablets are made at each stroke, according to size. The amount of material and the degree of compression are both under control.

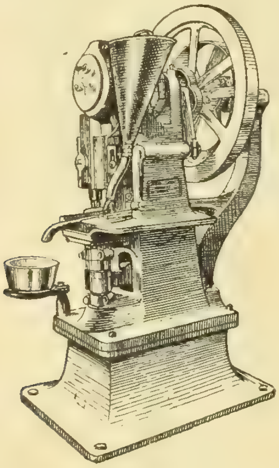


The Holroyd (No. 3) Tablet Machine.

The No. 3 machine is made specially for manufacture of hypodermic tablets, and costs £55; it can be worked either by hand or power, weighs about 1/2cwt., and occupies a space of 9in. × 18in. It makes tablets from 1/16in. to 1/4in. in diameter, at the rate of about forty per minute.

The Mulford Tablet Machine.

This machine is not made to work by hand, being constructed for operations on the large scale only. The Mulford No. 3 machine, here illustrated, is intended to cover a wide range of work—from the smallest triturate-tablet to the manufacture of food tablets, plant-food tablets, camphor cakes, and any tablet up to 2oz. in weight. It will compress one, three, or six tablets at a stroke, has a capacity of 360,000 perfect tablets per day of ten hours (36,000 per hour), and runs almost noiselessly.

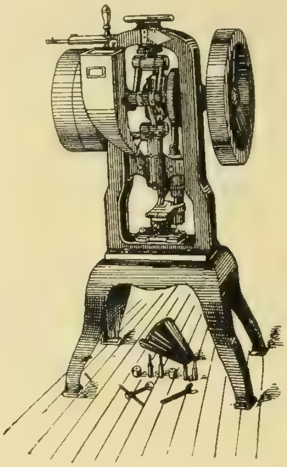


The Mulford Tablet Machine.

It weighs 1,500lbs., requires a floor space of 3ft. × 4ft., and from 1/2 to 3 horse-power. The machine is built on duplicate system; all parts are fitted with wear adjustments, and cams are adjustable for different size tablets. The adjusting device for controlling weight of tablet is regulated by one small wrench, and is extremely simple, consisting of three parts, one only of which is used in securing weight of tablet, and, when locked, is positive and cannot change; hence the weight of the tablets will not vary. Further particulars regarding this machine can be obtained from the London agents, Messrs. Bennett, Sons, and Shears, Ltd., 167, Kingsland Road, N.E.

The Colton Tablet Machine.

This machine is also worked by power only. It possesses simple and reliable adjustments for regulating both the weight and pressure of tablets without the use of wrenches. There is also perfect alignment of punches, so that it is easy to adjust the lower punch flush with the top of the die. Other advantages of the Colton machine are its convenient arrangements for extracting the various parts, the increase of power with the special toggle equipment, and its capability of compressing at the rate of 120 tablets per minute.

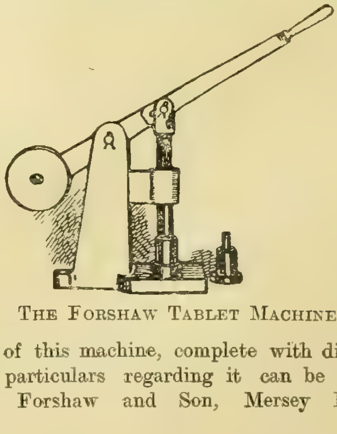


The Colton Tablet Machine.

The price of the Colton tablet machine is £25 net and further particulars regarding it can be obtained from the London agents, Messrs. J. L. Hatrick and Co., Ltd., 82, Turnmill Street, E.C.

The Forshaw Tablet Machine.

This is a useful machine for stamping or pressing druggists' sundries, whether in powder, paste, or solid. It is not made with the idea of a big output, but as a handy machine for a chemist or grocer to have in his possession, to put to a variety of uses, such as he may require at any moment. In addition to simply pressing the material, the machine may be used to pack it tight in boxes or packages, or for branding specialties. The process of stamping is simple. The material is measured into the bottom die, and then pressed down with a sharp blow. There is a small slide in the table which is drawn out; the handle is then pressed further down, thus delivering the pressed or stamped tablet below, where it falls into a receptacle. The balance weight serves to bring the lever into position again for stamping, and also adds considerably to the power of the blow. Tablets from any small size up to two inches in diameter—round or square—can be satisfactorily stamped with the Forshaw machine.



The Forshaw Tablet Machine.

The price of this machine, complete with dies, is £5 10s., and further particulars regarding it can be obtained from Messrs. E. Forshaw and Son, Mersey Boiler Works, Warrington.

LETTERS TO THE EDITOR.

Side-lines for Chemists.

Allow me through the medium of your Journal to say with what consternation I read last week's report of the impromptu addresses given at the meeting of the Chemists' Assistants' Association concerning the above title. I have heard at various times suggestions with regard to side-lines, but I think I never heard anything to equal these. Photographical and optical lines might possibly be advantageous on conditions that a thorough practical knowledge of them is procured, but for my own part I should say, Let the photographic dealer be a photographic dealer, the optician an optician, and the chemist a chemist. But to amalgamate the pharmacy with a "whisky and cigar bar," well, rather than we will do that we will shut up shop altogether and go back to the days of alchemy, when ignorance was blissfully blended with fakement. Imagine a sign over the chemist's doorway in the immediate future something to this effect:—"This way to the pub.!" I can see the nebulous form of Jacob Bell standing and gazing at it, and with a cry of despair shout, "Goodness me, have all my labours been in vain?" I am of opinion that we have not got too many men, even yet, who are worthy the name of "chemist."

Finsbury Park, N., February 15, 1902. J. Todd.

Free Trade and Income Tax.

Of great importance to manufacturers in this country was Mr. D. Macivers's motion (reported in the *Globe* of the 11th inst.), to the effect that when the Chancellor of the Exchequer introduces his financial proposals he intends moving that the income tax be reduced by half, and any additional revenue shall be obtained by a tax of not less than 5 per cent. *ad valorem* on imports generally and 10 per cent. *ad valorem* on imports on manufactured goods, in each case subject to preferential advantages in respect to those of our dominions, colonies, and dependencies who give preferential treatment to their imports from Great Britain and Ireland. I sincerely trust Mr. Maciver will be successful in getting a Bill passed in Parliament to this effect, and as Sir Howard Vincent (the member for Sheffield) said, when speaking at Eton School some few days ago, we should buy British manufactures only, as we are able to manufacture in Great Britain all the necessary requirements of our country. The member for Sheffield has always been endeavouring to bring this matter forward, and I am glad to see another member of the House doing the same thing, and this motion should certainly be supported by every member of the House. As everyone is aware, this country is flooded with cheap, foreign, inferior goods, and pauper aliens who crowd our own workman out of the labour market, and it would be as well if our buyers remember this, and endeavour to place their orders with British manufacturers only. I trust we shall see in the near future that some proper steps have been taken in this all-important matter.

London, February 17, 1902. Vincent Wood.

Dispensing Problems.

I am very much surprised at the so-called dispensing problems by "C. B." (70/10). I fail to see any problem about either of them; they seem to me as simple as anything that could come before the notice of a pharmacist. In the case of No. 1, what necessity is there for omitting the liquorice from the pills? They can be massed very easily with syrup of glucose into 4½ grain pills. As regards No. 2, the substitution of bismuth carb. for bismuth subnit. is certainly not justifiable, nor is it necessary. Granted the therapeutics of the two are identical, if the medical practitioner orders bismuth subnit., by all means dispense it. Neither is the omission of the mucilage necessary. Mucilage of tragacanth is undoubtedly better than that of acacia, on account of the latter causing the bismuth to cake to the bottom of the bottle. Probably "C. B." has used some mucilage which had gone sour, the acid of which would react with the sod. bicarb. Sod. bicarb. is, of course, intended, not the normal carbonate.

February 15, 1902. "C. R. D." (120/36).

In reply to "C.B." regarding "Dispensing Problems" of last week's issue, to my mind the correct way of mixing No 1 would be to reduce the ferri sulph. exsic. to fine powder, mix this with the ext. aloes (also in fine powder), and pulv. glycyr., lastly adding the ext. nuc. vom., and triturating until intimately mixed. Regarding No. 2, I should triturate the bismuth subnit., sodii bicarb., and a portion of the water, in a mortar, until the evolution of gas ceases. Then suspend this in the mucilage and make up. There is not the slightest doubt but that sodii carb. was a slip of the physician, who meant sodii bicarb. Several physicians of the old school whom I know always write and speak of it as sodii carb. As to its being justifiable to omit or substitute, I always think it is the duty of the dispenser to do neither, unless he has the permission of the prescriber to do so. In the present instance there is not the slightest doubt the mixture would keep much better without than with the mucilage, especially in summer weather, and its medicinal action be the same; and although there are those among the medical profession who prefer it without, there are those who prefer it being suspended, and if it is ordered to be suspended, to send it out otherwise would be *infra dig.*

London, February 18, 1902. J. H. Shuttleworth.

The Qualifications of Dispensers.

I read the article on the above subject in your last week's issue with much interest, as it is a question which has a most important bearing on the dispensing in our public institutions. The Apothecaries' Hall Assistant's Examination is totally inadequate to fit any person with the requisite and complete knowledge they ought to possess in chemistry, materia medica, and pharmacy, if they are to be efficient and trustworthy dispensers. We, who have been dispensing chemists in hospitals, asylums, infirmaries, etc., know full well that to be worthy of our calling requires a practical training, not of six months, but of as many years. I recently had occasion to test the knowledge practically of two Hall candidates for appointments under the Local Government Board, and was simply amazed at the crass ignorance displayed by both "assistants." Whether nervousness took possession of them or not I cannot say, but any intelligent chemist's apprentice of a year's standing could have given them points. Surely when such are entrusted with the handling of poisons and the dispensing of prescriptions they ought to be required to possess not a "cram" qualification, but one which is adequate and efficient to the discharge of such important and responsible duties. I trust the forthcoming inquiry by the Committee of the Pharmaceutical Society will be fraught with some good in deciding this knotty point of "Pharmaceutical" *versus* "Apothecaries' Hall" qualifications.

London, February 18. "M.P.S." (120/38).

The Indian Opium Trade.

Mr. Judd Lewis is one of those estimable people whose philanthropic zeal exceeds their discretion. The report of the Opium Commission is fairly conclusive evidence that the stories of wholesale demoralisation of the Chinese race by the habit of opium smoking belong for the most part to the department of fiction. But what is of more immediate importance is the fact, habitually ignored by the above-mentioned people, that

Indian opium forms only a fraction, and an annually decreasing proportion of the total opium consumed by the Chinese. There is a good deal imported from Persia, but by far the greatest increase is in the native-grown opium. The officials may profess to be filled with a consuming desire for the suppression of the traffic, but unfortunately the facts are against them.

Edinburgh, February 17, 1902. D. B. Dott.

Covering by Registered Persons.

Although being a member of the Pharmaceutical Society residing abroad, I have always taken a great deal of interest in its doings, apart from my various occupations, as well as read the controversies that have been going on since a few years. Now, I do not see any material use the Pharmaceutical Society had in the passing of the last Pharmacy Act, unless it had acquired the power to make its membership compulsory on the part of its graduates; by this act it has simply given away a sacred privilege that was reserved to the pharmaceutical chemist, and under such conditions offers no inducements to students to proceed for the Major, which will eventually become nil, and have spoilt its noble policy of furthering education. Secondly, all the talking concerning the draft Bill is nonsense. If, as we pretend, we are united, we ought to strive that the Society should have control over us to begin with; and having thus a compulsory membership, it will naturally follow that it will have penal powers to deal with us. Therefore, registered persons who would cover unqualified practice would be struck off, and in that way all our grievances would be solved; but under existing conditions, with all the passing of the draft Bill, the desired end will never be obtained. The Pharmaceutical Society must first obtain power to deal with its own people before attempting to fix other people's houses In conclusion, I say all the Pharmacy Acts that have been passed, or are now proposed, simply spoil our charter, and have not the desired end. The Pharmaceutical Society's actual policy is to be condemned; there is too much giving away for nothing in exchange.

Nelvil St. Cyr, Ph.C.

Aux Cayes, Hayti, February 1, 1902.

Fuller's Lotion.

The following was given here a short time back for above :—

℞ Sod. Carbon. .... ʒvi.
Tinct. Opii .... ℥i.
Glycerin. et Aqua, part. æqual., ...ad ℥viii.

St. Mary's Hospital, London, W.
February 19, 1902.

Edward A. Andrews,
Dispenser.

What is Mandl's Solution?

Can any reader inform me what is the composition of Mandl's Solution? The prescription was written thus:—

℞ Mandl's Sol. .... ʒii.
Sig. To be painted on the throat with a camel-hair brush.

February 18, 1902. "M. C." (70/19).

Clover Burns on Horses.

Has any reader ever had any experience with elsic (? alsike) clover burns on horses, and, if so, say if they can be cured?

February 15, 1902. "J. S. B. H." (70/12).

Filling Glass Tubes With Compressed Tablets.

If any reader is aware of the name of the maker of any machine for automatically filling glass tubes with compressed tablets I shall esteem it a great favour if he would kindly acquaint me with the same.

February 16, 1902. "A. J. T." (70/15

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply.

Hair Lotion (A. D.—70/13).—You do not say what the composition of the lotion is.

Powder (A. D.—70/17).—You should address this question to the makers of the inhaler, not to us.

Words on Label (A. D.—70/17).—Such words would not in themselves render the medicine liable to duty. See notes on the subject at page 161.

Alkannin (A. D.—70/13).—(1) No. (2) We cannot say, but you might try the effect of an alcoholic solution. (3) You should be able to obtain it through any wholesale house.

Apothecaries' Assistant (A. K.—70/14).—(1) No. (2) No. (3) Mr. J. R. Upton is Clerk to the Society and Mr. Frank Haydon is Secretary to the Court of Examiners.

Baker's Itch (J. S. B. H.—70/12).—It is a form of eczema. produced in the hands by local irritation. Combined external and internal treatment is required, but we cannot give details here.

Chillies (A. H. H.—70/4).—They are small capsicums, known in commerce as "Cherry capsicums," and are probably obtained from *Capsicum annuum*. Can you send a larger sample for the Society's Museum?

Preservative for Eggs (J. S. B. H.—70/12).—Water glass (sodium silicate) is obviously meant, the thick syrupy liquid being diluted with nine times its volume of water and the eggs immersed in the solution.

Universities.—(H. W.—70/20).—(1) Not so far as regards London University, and we should imagine not as regards the other. (2) Knowing the requirements of the examiners, you ought to be able to decide this point for yourself.

Apprenticeship (H. R.—70/11).—(1) Your best course is to endeavour to settle the matter amicably; otherwise you ought to consult a solicitor. (2) The certified declaration need not be signed by the person to whom you were apprenticed, but it would be unreasonable on his part to refuse to sign it.

Name on Labels (K. E. B.—70/16).—According to the Pharmacy Act of 1869, the medicine, if containing a scheduled poison, must be "distinctly labelled with the name and address of the seller," *i.e.*, the person on whose behalf the sale is made. You say no charge is made for the medicines, but it might be difficult to convince a County Court judge that no sale is made.

Sodium Bisulphate as a Water Purifier (K. P.—70/18).—The salt has been used for preventing water-borne enteric fever, fifteen grains being added to each pint of water. A solution of that strength is said to be capable of destroying the *Bacillus typhosus* after fifteen minutes' contact. The water so treated does not produce any laxative effect, and the somewhat acid taste imparted to it tends to increase its palatability.

Pharmaceutical Journal.

A Weekly Record of Pharmacy and Allied Sciences.

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Members of the Pharmaceutical Society must address all communications with reference to the transmission of the Journal, to the Secretary, 17, Bloomsbury Square, London, W.C.

LONDON: SATURDAY, FEBRUARY 22, 1902.

PHARMACEUTICAL ORGANISATION.

The issue of this week's Journal to every individual on the Register of Chemists and Druggists again offers an opportunity for addressing those members of the trade who are still unconnected with the Society, in order to point out the disadvantages attendant on that anomalous position in regard to a Society constituted for the special purpose of enabling legally qualified chemists and druggists to promote the interests of their calling by mutual co-operation. When writing on the same subject, last year, the returns furnished at that time by the Registrar under the Pharmacy Act, showed that little more than one-third of the registered chemists of this country were members of the Society. This year the total number of registered chemists and druggists has been reduced to 15,600, or 650 less than last year; but the actual number of members of the Society is only slightly larger and the relative proportions, of members and non-members, are also but slightly altered. When that circumstance is considered in connection with the necessity for amended legislation, which is so generally felt by registered chemists, in order to give due effect to the intention of the Pharmacy Acts, and with the unquestionable fact that the Pharmaceutical Society is the only organisation that can adequately represent them, or effectively urge their claims to consideration by the Legislature, in accordance with the spirit of the Acts, the conclusion is inevitable that, while the present lack of organisation continues, the influence of the Society in those directions must be very materially weakened, to the detriment of the common interests of the entire body of registered chemists and druggists.

In view of the probability that legislation affecting chemists and druggists will be attempted before long, attention requires to be directed to these facts. For some time past much has been said and written concerning the want of unity and of organisation among chemists and druggists; the need of federation has been very generally recognised in various ways; but for all practical purposes the only federation by which those objects can be realised is membership of the Pharmaceutical Society. All other forms of federation or local association, good as they may be, are merely subsidiary and of more or less partial value. Until membership of the Society becomes more fairly co-extensive with the statutory Register, the power of the Society to combat adverse influences or to promote the general welfare of the craft will be insufficient for those purposes. Nor would mere increase of membership alone suffice unless accompanied by active individual participation in work to be done for conserving and advancing the common interests of the body that was created by the Act of 1868 for State purposes; but endowed with power of self-government and of self-regulation, in place of the subjection to medical control which was proposed and, at one time, apprehended. To discuss the question whether chemists and druggists have made use of those advantages as fully as they might have done, for their own benefit, would not serve any useful purpose; but it may be urged that there is ample opportunity to make further use of those important privileges, as well as great need of doing so. Not many years ago the President of the Society, in addressing an annual meeting, had occasion to point out that chemists and druggists, and even some members of the Society, are not wont to praise or to appreciate sufficiently what they possess, but that their usage has generally been to damage their own property. That mistaken tendency has even been manifested by writers who not unfrequently seek to disparage the statutory qualification which is the basis for distinguishing between registered chemists and druggists and any other traders—in fact, the only foundation on which the Legislature could be asked to consider a claim for amendment of the law in their interest.

Whatever may be the true explanation of that strange proceeding on the part of writers who, though anonymous, are ostensibly chemists and druggists, the arguments they make use of have a further application than they appear to perceive. For, if legally qualified chemists and druggists are sometimes so wanting in the competent knowledge of their business as is represented, that deficiency must be attributed to the failure of the machinery by which the object of the Pharmacy Acts is to be secured, not to the worthlessness of the technical knowledge considered to be necessary for the purposes of those Acts. The inappropriate criticisms now referred to really point to one of the cardinal defects of the existing law in making examination alone the test of competence to carry on the business of a chemist and druggist, without any corresponding provision as to the means by which such knowledge and practical competence are to be acquired. The remedy of that defect, in such a manner that every apprentice who has served three years with a chemist and druggist may be able to satisfy the Board of Examiners that he is competent to carry on the business on his own account, will be one of the chief problems connected with the organisation of chemists and druggists, which may be expected to engage their attention and that of the Legislature; it is a problem of fundamental importance, and, therefore, it is mentioned here as offering material for reflection.

ANNOTATIONS.

A Martindale Memorial has naturally suggested itself as a thing much to be desired at the present juncture, and it has been decided to hold a meeting to consider the matter in the Council Room at the Pharmaceutical Society's London house, on Tuesday, March 4, at 3 p.m. As that is the day upon which members of Council assemble to begin their labours in connection with the usual monthly meeting, it may be anticipated that most of them will be present at the meeting to deliberate concerning the most desirable way of perpetuating the memory of their late esteemed colleague. Moreover, since a copy of the present issue of the Journal will be sent to every person whose name appears upon the Register of Chemists and Druggists, an exceptional opportunity is afforded for directing the attention of the entire craft to the proposal, and thus enabling any pharmacist to make a suggestion prior to the meeting, in case he should be unable to attend on that occasion. Any such suggestions addressed to the Editor will receive attention in the columns of the Journal next week, if the communications arrive not later than Wednesday, February 26. Among the ideas which have been mooted are (1) a portrait to be hung in the Council Chamber; (2) a bust to be placed in the Examination Hall at Bloomsbury Square; (3) a Martindale Scholarship. It is probable that a portrait in oils, which will cost about £150, will be decided upon in any case, but if any general desire exists among the pharmacists of Great Britain to establish a worthy memorial of William Martindale, it should be possible to provide for something on a much larger scale.

The Title "Chemist" continues to be misapplied in the lay Press, though not, it is satisfactory to note, without protest by legitimate holders of the title. At the same time, more frequent protest on the part of duly registered chemists and druggists would probably prove of greater force. In fact, there is not the least doubt that, if every registered chemist in a given district were to write a letter of protest to the editor of any local paper in which the title "chemist" was misapplied, lay journalists would soon learn to be more chary about calling anyone a chemist without good reason. In three instances to which attention has recently been directed persons not registered as chemists have been referred to as such in provincial newspapers. The *Western Mail* of February 1 reported that a "chemist" had died from alcoholic poisoning, after being discovered in an exhausted condition on his premises, which had been closed for a week. But the name of the deceased person did not appear on the Register of Chemists and Druggists. Neither did that of an alleged "chemist" reported in the *Leeds Mercury* of February 4 as having died from the effects of alcoholism and delirium tremens, accelerated by shock caused by swallowing some diluted hydrochloric acid. Nor was it a duly registered person whom the *Yorkshire Post* of February 4 described as a chemist, when reporting how he had been prosecuted and fined for sending a young boy to purchase brandy at a public-house. In each case, the editor of the paper ought to have received a letter of protest from every registered chemist in the district, and the one or two who did so protest deserve the thanks of the whole craft.

Anti-Opium Enthusiasts have been prompt to seize upon the opportunity apparently afforded them by the recent publication in these columns of a note on the Indian opium trade, but there is no intention of allowing them to encroach upon the limited space available in the Journal for the dissemination of information which more or less directly interests pharmacists. The various anti-opium organisations may be doing a very good work, though it is doubtful if they are likely to earn the gratitude of those on whose behalf they are avowedly agitating, and it is more than doubtful whether they will ever be able to wean Chinese and other Oriental opium-smokers from their alleged evil habit. It is necessary also to bear in mind that less and less Indian opium is consumed in China as time goes on, the native supply being greater in each successive year and the Indian drug becoming more of a rich man's luxury than a poor man's necessity. Over and above that, the only reason for referring to the matter in the Journal is that India is able to produce excellent opium for medicinal purposes, and it is greatly to be feared that any interference with the cultivation of the poppy, by well-meaning but not always well-advised people, may retard commercial progress and prevent Indian opium from taking its proper place in the markets of the world for a much longer period than is likely to elapse in the normal course of events.

A Question of Etiquette has been raised by a correspondent, who asks whether a member of the Pharmaceutical Society who used the letters "M.P.S." after his name in writing to a fellow member or a customer can be considered guilty of bad taste? Further, he inquires what are the special occasions upon which the use of the letters becomes incorrect from the point of view of etiquette? To take the second part of the inquiry first, the use of the letters appears to be suggested in cases where communications of a professional or business character are addressed to medical practitioners, coroners, and public officials generally. There will also be occasions upon which it would be wise to intimate the fact of membership of the Society to other members and even to customers, but in such instances the communications will probably be written upon business letter paper or memorandum forms, bearing a printed heading in which the fact of membership of the Pharmaceutical Society will be stated. Perhaps, however, the most satisfactory plan of all is to have one's qualifications specified upon ordinary visiting cards, one of which can be enclosed with any letter if such a course should appear desirable.

The Proprietaries Question is to be discussed and considered thoroughly at a special meeting of the Grocers' Federation, which is to be called within a month for that purpose. The *Grocer*, in expressing its satisfaction that such a meeting is to be held, points out that the question of proprietary articles is now practically where it was years ago, save that things are a little worse for the grocer, the tendency of his trade being more and more in the direction of the proprietaries, and his net profits being to that extent reduced, owing to the general rule that the gross profit on those popular articles is unsatisfactory. But because some proprietary articles are sold through co-operative stores, or other concerns, which give a "dividend" to retail purchasers, it is said to be absolutely impossible to bring about a better state of things. It has been pointed out observes the *Grocer*, that in some articles minimum prices are obtained, but that is held to be of no account; and, because agreements have sometimes come to grief after lasting for a while, it is alleged to be utterly useless to try any more, "as though even an agreement which failed was no good while it lasted, and as though a better profit even on a few things, and for a few months, were not something to the good, however little!" The proposed special meeting of the Grocers' Federation is considered by the *Grocer* to be decidedly the best course, as it can do no harm, while it may lead to a great good for the bulk of the trade, if not for individuals. Associations are, therefore, advised to take up the matter in earnest, and to be particularly careful they do not "spoil the ship for a ha'porth of tar" by letting any such trumpery questions as delegates' expenses interfere with their sending their very best men to the forthcoming meeting. In the meantime readers of the *Grocer* are invited to focus attention upon three points: (1) Is the subject of proprietary profits worth discussing any further or not? (2) Is any scheme to bring about more remunerative trading in these articles desirable? (3) If so, what is the best plan to bring such a scheme into operation? It is considered that the more those points are discussed, the more certain it will be that the trade will not be content to leave matters where they are.

The Butter Regulations Committee has published an interim report, in which attention is limited entirely to the single point of the excess of water in butter. The Committee states that its chief difficulty was caused by the question of Irish firkin butter, which has a special though decreasing market, on account of its low price, distinctive flavour, and long-keeping qualities. Owing to its traditional methods of manufacture, this butter necessarily contains more than the usual percentage of moisture, but the Committee thinks it will be sufficient to give vendors of such butter legal protection provided that a sufficient disclosure is made to the purchaser. The recommendation of the Committee is that the limit of 16 per cent. be adopted for the proportion of water in butter to be fixed by a regulation under Section 4 of the Sale of Food and Drugs Act, 1899, and they make this recommendation on the assumption that butter containing a larger percentage of water than 16 per cent. will escape the operation of this limit provided that a sufficient disclosure is made to the purchaser.

The Increasing Use of Strychnine is protested against by the *Medical Press*, which points out that, as a therapeutic agent, the alkaloid has grown in favour until it has become the most used of all the tonic remedies, and finds a place in a large number of proprietary medicines—pills and mixtures. But its great and valuable properties are stated to be abused, both by the medical profession and the public generally, and, without any desire to depreciate the value of strychnine as a simple bitter, or as a respiratory and cardiac tonic, the *Medical Press* directs the attention of the medical profession to its alleged abuse. Though it is an excellent whip to a flagging heart, to be used at a crisis, its continued use is urged to be harmful and fraught with evil. A rapid running pulse and great nervous irritation follow from its too prolonged use in fevers, and its use in the treatment of delirium tremens, for which it has been strongly recommended, is not unattended with danger. Further, though alcoholics can take very large doses of the alkaloid, unless it is given in toxic doses it seems to produce none of its physiological effects.

Natural Crossing Among Cruciferous Plants has been alleged to be non-existent, but the results of experiments conducted by Mr. A. W. Sutton, a member of the well-known seed firm at Reading, prove conclusively that such crossing takes place with great facility. Thus, at the beginning of the year 1900, he planted in a seed-bed one plant each of dwarf green curled kale, Brussels sprouts, broccoli, red variegated kale, purple curled kale, thousand-head kale, Portugal cabbage, giant drumhead cabbage, Sutton's Favourite cabbage, dwarf blood-red cabbage, and drumhead savoy. Several of the plants were either killed by the winter or so much damaged that they did not mature any seed, but the seed of each of the other plants was saved, kept separate, and carefully sown in the spring of 1901. From the plants thus raised two transplantings were made, each of about forty plants, the plants being taken without any selection in one case, while in the other as many diverse forms were chosen as could be picked out from the appearance of the leaves. The results, now that the plants are mature, are described in the *Standard* as being so remarkable that they could hardly be imagined by anyone who has not seen them, the crossing among the different varieties of the cruciferous plants, by natural agency, being as profuse and intricate as it could have been rendered by the most ingenious human manipulation. Indeed, it is said to be almost certain that if anyone had essayed to cross the plants artificially, as curiously and diversely as they have crossed naturally, he would have spoilt his subjects, or many of them.

Some Electrical Developments are being explained in a course of lectures at the Royal Institution, the first of which was delivered by Lord Rayleigh on Saturday afternoon last. The subject first dealt with by the lecturer was mutual induction, which was shown to involve certain principles of energy which are of general application in many branches of physics other than that of electricity. The law at the basis of electrical induction is that known as Newton's Third Law, which states that in all cases where an action takes place, there is an equal and opposite reaction. The prenomenon of mutual induction is an application of that law to the case of an electric current. When a coil of wire, in which a current is passing in a given direction, is surrounded by another coil, a proportional current is set up in the latter, flowing in the opposite direction. That was first noticed by Faraday, who afterwards discovered most of the leading principles involved, and since his day Lord Kelvin, Hughes, and other workers have been engaged in the same direction, the results of their labours having made possible many modern practical applications of electricity, including the induction coil, the dynamo, and the Röntgen rays, which are usually produced through the agency of the Ruhmkorff coil.

The Pharmacy Act of 1868, according to the *Field*, though passed in order to protect the public against the sale of poisonous drugs by unqualified persons and to render it difficult to procure such drugs for unlawful purposes, has been so interpreted as to cause a good deal of unnecessary inconvenience and trouble to persons engaged in agriculture, who find themselves hampered by various restrictions and regulations on the sale of such things as sheep dips, insecticides, and weed-killers. There is a familiar ring about this statement, and there is probably good reason for supposing that the indefatigible Secretary of the Traders in Poisons, etc., Protection Society has won the editor of the *Field* over to his view of the position. The journalist referred to, however, admits that the subject is not an easy one to deal with, as free trade in poisons might be attended with some of the dangers which the Pharmacy Act seeks to minimise if not altogether to prevent. Nevertheless, he thinks the question resolves itself into this, namely, whether the interests of one of the most important industries in the country are to be subordinated to an attempt to safeguard the few persons who might be tempted to make an improper use of greater facilities in the way of purchasing poisons. That is to say, the editor of the *Field* appears to be of opinion that it is not worth while causing inconvenience to farmers for the sake of preventing death by poison. He also adds that it is very doubtful whether those who wish to procure poison for unlawful purposes are deterred from doing so by such restrictions as already exist, and equally doubtful whether the removal of those restrictions would cause any increase in the desire to purchase for such objects. On the other hand, he thinks it is certain that the removal of those restrictions would be of great practical convenience to agriculturists, "who can very well be trusted not to abuse any relaxation in the present law." The statement quoted might be just as well made with reference to any other class, and is, therefore, far from proving that the law regulating the sale of poisons should be amended especially in the interests of farmers. Moreover, it has not yet been proved that farmers suffer any of the inconveniences supposed to be caused by the restrictions imposed by the Pharmacy Act.

REVIEWS AND NOTICES OF BOOKS.

‘PHARMACOPEDIA’: A Commentary on the British Pharmacopœia, 1898. By EDMUND WHITE, B.Sc. (Lond.), F.I.C., Pharmaceutist to St. Thomas's Hospital, London, and JOHN HUMPHREY. Pp. 692, with 46 full-page plates. Price 14s. net. London: Henry Kimpton, 13, Furnival Street, E.C. 1901.

Though intimate acquaintance with the subject matter of the national medicine book is essential for those engaged in the practice of pharmacy, and though candidates for qualification in that capacity are required to prove that they possess thorough knowledge of the scientific principles underlying the descriptions, directions, and other technical details of the Pharmacopœia, it is also true that hitherto the conditions of apprenticeship to the business have not generally been such in this country as to afford the requisite facilities for acquiring that knowledge. The difficulty now experienced by chemists in obtaining apprentices may be to some extent due to that deficiency rather than to any disinclination to enter the business. But, however that may be, there is at present an evident disposition to consider, and to make provision for, the claim of apprentices to be instructed in the scientific subjects connected with their occupation as well as in the manual operations appertaining to it. Some provision of means for effecting that very desirable object may, therefore, be expected to form the next forward step in the pharmaceutical reform that has been in progress during recent years.

Meanwhile, any attempt to assist apprentices in their studies, or to enable them to acquire an intelligent comprehension of the technical details of their business, is to be heartily welcomed as conducive to the general interest of the craft. It is in that sense the work published under the appropriate title of ‘Pharmacopedia’ is to be commended to apprentices as a timely and useful means of gaining the knowledge requisite for their qualification and for the efficient exercise of their business. In taking the subject matter of the British Pharmacopœia as the basis of an exposition of its scientific aspects more complete than could be given in that work, the almost necessary adoption of an alphabetical arrangement may be attended with some slight disadvantage, since the study of a commentary on the separate monographs of the Pharmacopœia would presuppose some general acquaintance with chemistry and with the other branches of science related to pharmacy. But any attendant disadvantage of that kind, or the occurrence of possible difficulties as to the meaning of scientific terms, will be largely compensated for by the circumstance that the student's attention is specially directed to the pharmaceutical bearing of scientific details in a manner that would not be the case in ordinary systematic text-books.

The main object of the authors of ‘Pharmacopedia’ has been to enable students to comprehend the meaning of those technical details which are necessarily stated with suitable brevity in a highly specialisel work like the Pharmacopœia. By that means ample opportunity is afforded of securing thorough grasp of the subjects which pharmacists are called upon to be conversant with. A careful study of ‘Pharmacopedia’ during the period of apprenticeship, with the aid of the excellent “Advice to Students” which forms a preface to the work, ought to place any candidate for pharmaceutical qualification in the position to present himself to the examiners with full confidence that their demands would be fully satisfied. ‘Pharmacopedia’ should, therefore, be in the possession of every chemist's apprentice, and continually engage his attention from the first day of his entrance upon the duties connected with that position. If that were made a general practice by all apprentices it may safely be predicted that there would soon be a very marked alteration in the deplorably small proportion of successful candidates for qualification that is now a constant feature of the examination.

The monographs on drugs bear evidence of careful and painstaking work, and the information they afford leaves no excuse for the superficial knowledge with which the average student is too frequently content. It is with sincere pleasure that we find that the authors of ‘Pharmacopedia’ have succeeded in reaping, and even gleaning, the multifarious items of knowledge relating to official drugs scattered throughout the world's periodical literature. Only those who have attempted to trace the results of the numerous chemical investigations which from time to time have been carried out upon official drugs can appreciate the laborious nature of the enterprise which Messrs. White and Humphrey have brought to completion. The authors' intention to present as complete a survey as possible of the latest and most accurate information as to the botany, characters, tests, and constituents of each drug is carried out with a success which has not been won by any other text-book of recent years. We think they have wisely eschewed all temptation to deal with historical information, although some of the older papers are worth consulting—for instance, a reference to Professor Redwood's and Mr. Willmott's papers would have saved them from stating that the membranous matter is to be strained out of lard by means of muslin.

Each monograph is divided under three heads. The first deals with the botanical and geographical origin of the drug and the means used for its collection or production; then follow “characters and tests” and “notes.” This simple arrangement has permitted the authors to give to each monograph a literary flavour which could not have been so well done if they had affected the division under the numerous heads—habitat, description, constituents, adulterations, properties, etc.—so common in materia medica text-books. That simplicity of scheme in a few instances may be attended with the disadvantage that some of the characters of a drug may appear in one section of a monograph and some in another. It may also cause the authors to omit mention of the most elementary facts, as in the case of the cod-fish, concerning which no information is given as to the part of the globe in which it is found or the countries where cod-liver oil is manufactured. The habitat of the olive tree has also been overlooked. We have scrutinised the book with more than ordinary care and with great interest because it is the only attempt that has been made in this country, to our knowledge, to deal adequately with the complicated chemistry of the articles of the official materia medica. Errors of statement are unusually rare.* It is stated, we notice, that “Betel consists of the dried leaves of *Piper betle*”; the article made official in the “Indian and Colonial Addendum” is not the dried leaves, and the description, we imagine, refers to the leaves in a more or less fresh state as used in India.

In the monographs dealing with those articles of the Pharmacopœia commonly spoken of as chemicals, the usual manufacturing processes are described and their chemistry fully explained with the aid of equations. The various Pharmacopœia tests of purity, as well as the methods of volumetric and gravimetric analysis, are fully explained in a lucid and interesting manner, so that in all instances the nature of the chemical reactions can be readily understood by the student. As occasion offers, explanations of the general principles of chemical science are introduced, as, for example, in connection with the preparation of ferrum redactum by the action of hydrogen on heated ferric oxide, a lesson on mass action is conveyed; under acid potassium tartrate the phenomena of supersaturation are described, as well as modern electrolytic processes in connection with the manufacture of potassium chlorate. The theoretical views concerning isomerism, hydrolysis, ion dissociation, ion concentration, and chemical equilibrium, etc., are also described in the monographs on bismuth subnitrate, antimony sulphide, zinc acetate, sodium phosphate, etc. The accounts given of the chemistry of organic compounds, fixed and essential oils, alkaloids and the synthetic compounds, phenacetine, phenazone, etc., are of exceptional excellence and distinctly in advance of anything previously published in book form in this country. That portion of the work will be invaluable to pharmaceutical students.

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* An advance copy of a printed list of corrections and additions to Pharmacopedia’ has just been received from the publisher of the work, with an intimation that he will be pleased to send a copy of the list gratis to anyone possessing a copy of the book, on receipt of a stamped addressed envelope or wrapper.—[ED. *Pharm. Journ.*]

Pharmacy is conveniently treated of under general heads where the principles involved in the making of the various kinds of galenical preparations are explained in concise and simple language. Those clear expositions, taken together with the advice to students at the beginning of the book, should serve to prevent a student from falling into the too frequent mistake of endeavouring to commit to memory multifarious details of which he has no intelligent appreciation. In that respect the monograph on Extracta is worthy of special mention; in it the solvent action of the different menstrua and the rationale of drug extraction are first elucidated, then follows a classification of the official extracts based upon the menstrua employed, while an appendix treats generally of the principles of standardisation and alkaloid determination, describing the theory of "shaking out" operations by means of immiscible differential solvents with the addition of useful practical hints and references to some of the work that has recently been done in that direction. Under the head of Injectiones hypodermicæ directions are given for sterilising solutions, and the notes on the dispensing of alkaloids, which not unfrequently gives rise to much perplexity, suggest the desirability of further development of that subject in a future edition of the work. It is not necessary for us to do more than refer to the atlas of drugs appended to 'Pharmacopedia.' The drawings must be familiar to readers of the Journal, in which many of them have appeared during the last year or two; being now printed on art paper, they naturally gain very much in clearness. The book is completed by a most exhaustive index.

No student who has any desire to master the details of materia medica, unless he is prepared to spend a considerable portion of his time in wading through his Journals for years past, and to shatter his nerves in deploring the non-appearance of a collective index, can afford to neglect this valuable aid to his studies. The complete pharmacist also will be often tempted to bring his knowledge up to date if he keeps this comprehensive compendium alongside his B.P.

NEW REMEDIES.

Antipyrine Camphorate.—Two combinations of antipyrine with camphoric acid have been prepared. The *acid camphorate*, obtained by the interaction of one molecular weight of camphoric acid with one molecular weight of phenyl-dimethyl-pyrazalone, forms white crystals melting at 95-98° C., which are slightly soluble in hot water, in alcohol, and in acid solutions. The *neutral camphorate* is prepared by combining two molecular weights of the base with one of the acid. It also forms white crystals which melt at 98-100° C., and which have a similar solubility. Both are stated to be antipyretic and anti-sudorific in action.—*Schweiz. Woch. für Chem. und Pharm.*, **39**, 375.

Treatment of Pruritus in Skin Diseases.—Leredde employs the following ointment to allay the itching accompanying the exfoliation which follows the application of Unna's resorcin paste in the treatment of lichen and other skin diseases:—Zinc oxide, starch, vaseline, and lanoline of each, 5. The pruritus diminishes after the first application, and becomes insignificant after the fourth dressing, the skin resuming its normal thickness. In a month nothing remains but a pigmented scar. The formula for the Unna's resorcin paste is: Benzoated lard, 14; zinc oxide, 5; kieselguhr, 1; resorcine, 20. This is applied for fifteen to twenty minutes.—*L'Union Pharm.*, **43**, 18.

FACTS A PHARMACIST OUGHT TO KNOW.

Stamp Duty on Medicines.

Stamp Duty is charged upon various medicines for human use, including (1) Dutch Drops, Godfrey's Cordial, and various more or less obsolete remedies named in the 1812 Act of George III.; (2) chemical and officinal preparations for the prevention, cure, or relief of any disorder or complaint incident to or affecting the human body, in the manufacture or preparation of which any occult secret or art is claimed; (3) medicinal preparations in connection with which proprietary rights are claimed; (4) medicines which are or have been the subject of Letters Patent; (5) medicines for internal or external use which have at any time been held out or recommended—in advertisements, handbills, or labels—(*a*) as nostrums or proprietary medicines, (*b*) as specifics, (*c*) as beneficial to the prevention, cure, or relief of any distemper, malady, ailment, disorder, or complaint incident to or in anywise affecting the human body.

The Complete List of dutiable preparations specified in the Act (1) is printed in Alpe's 'Handy Book of Medicine Stamp Duty,' but does not contain many articles of interest to pharmacists at the present day. (2) A claim to an occult secret or art is implied in a statement that a medicinal compound is prepared from the original or sole recipe, or to the effect that it is superior to any similar preparation. (3) Liability to duty is incurred by the use of such words as "prepared only by," or of a label bearing a trade mark employed exclusively in connection with the preparation, or of a proper name in the possessive case preceding the name of the medicine. (4) Very few patents for compound medicines are now in force, but a preparation which has at any time been sold under the authority of Letters Patent continues liable to duty, even after the patent has expired. (5) A medicinal compound is rendered liable to duty if the maker, vendor, or proprietor makes use in advertisements, etc., of any form of words which conveys the idea (*a*) that the preparation is a nostrum or proprietary article, or (*b*) that it is a specific, or (*c*) that it is capable of producing beneficial effects when administered to human beings; if the medicine be advertised to medical men and pharmacists only, the advertisement has hitherto not been regarded as a public notice such as would render it liable to stamp duty, but the practice is not a safe one to indulge in.

Medicines Liable to Duty may only be prepared and sold by persons of good character who hold an Excise licence, the cost of which is five shillings. The licence expires on August 31, whenever taken out, and only authorises the licencee to make or sell dutiable articles on one set of premises. The penalty for selling stamped medicines without having a licence is twenty pounds, and the penalty for selling a dutiable article unstamped is ten pounds. The stamp duties must be paid by the proprietors, compounder, or first vendor of the medicine before it is sold or exposed for sale—either wholesale or retail, or for foreign or home consumption. Medicine stamps can be obtained through any post office where money orders are supplied, and must be affixed to the packet, box, bottle, pot, phial, or other inclosure in such a way that the contents cannot be removed without tearing the stamps.

The Rates of Duty vary with the value of the medicine, and are as stated in the following table:--For and upon every packet, box, bottle, pot, phial, or other inclosure containing any drugs, herbs, pills, waters, essences, tinctures, powders, or other preparation or composition whatsoever used or applied or to be used or applied externally or internally as medicines or medicaments for the prevention, cure, or relief of any disorder or complaint incident to or in anywise affecting the human body, which shall be uttered or vended in Great Britain where such packet, box, bottle, pot, phial, or other inclosure with its contents shall not exceed the price or value of one shilling .. £0 0 1½

	s.	d.		s.	d.				
Shall exceed	1	0	and not exceed	2	6	..	0	0	3
,,	2	6	,,	4	0	..	0	0	6
,,	4	0	,,	10	0	..	0	1	0
,,	10	0	,,	20	0	..	0	2	0
,,	20	0	,,	30	0	..	0	3	0
,,	30	0	,,	50	0	..	0	10	0
,,	50	0 ..	..	..	..	..	1	0	0

Exemptions from stamp duty include (1) unpacked medicines; (2) entire or simple drugs and plain aqueous solutions of unmixed substances; (3) ginger and peppermint lozenges, or any other article of confectionery, unless sold as medicines, or recommended for the prevention, cure, or relief of any human disorder; (4) artificial mineral waters, aërated waters, and compositions in a liquid or solid state intended for the production of such waters; (5) preparations to be burned and the fumes inhaled or smoked; (6) toilet articles which are not recommended for the prevention, cure, or relief of any disorder; (7) medicines otherwise liable to stamp duty, when supplied for dispensing purposes and dispensed in combination with other substances.

The Exemption of (1) medicines which are not packed is not of much practical value, though it is understood that duly stamped inclosures of dutiable medicines may be opened by a retailer, and the contents sold without the payment of further stamp duty, provided they are not inclosed in a packet, box, etc., but sold loose, or merely wrapped loosely in paper, or supplied in a box or bottle brought by the customer. (2) Entire drugs and plain aqueous solutions of simple substances are exempt from duty when sold by surgeons, apothecaries, chemists, and persons who are duly licensed to sell stamped medicines. (3) Lozenges are liable to duty if sold or recommended as medicines, or stamped with the name of the maker or vendor in the possessive case. (4) Effervescing salines are exempt, unless they are made the vehicle for other medicines, such as caffeine or lithium citrate, and recommended as beneficial in certain cases. (5) Asthma remedies intended to be burnt, and the smoke inhaled, are exempt, as are also medicated cigarettes, but not smelling bottles or snuffs for which remedial effects are claimed. (6) Hair-washes, skin-lotions, etc., are rendered liable to duty, if claimed to be beneficial in any ailment, but not if simply recommended for the cure of baldness, freckles, sunburn, etc. (7) Medicines otherwise liable to stamp duty may be supplied by the makers unstamped if labelled "This medicine is to be used for dispensing only," and may be dispensed without payment of duty if forming part of a mixture, but must not be dispensed unmixed unless stamped as required by the Act.

In Addition to these specific exemptions of medicines from liability to stamp duty, there is in the Act an apparently wider exemption of all such medicinal preparations, "having different properties, qualities, virtues or efficacies," which "are known, admitted and approved of in the prevention, cure or relief of any disorder, malady, ailment or complaint incident to or, in any wise, affecting the human body." The extent to which that exemption applies practically has never yet been defined; but it is worth noting that whatever its scope, it applies to such medicines only when they are sold "by any surgeon or apothecary, chemist or druggist who hath served a regular apprenticeship," *i.e.*, recognised qualified persons. Mr. Alpe was of opinion that its applicability is small; but the statement given as a reason for that opinion—viz., that the exemption "does not take any medicine out of the general charge of duty that would otherwise fall within the charge"—does not appear to be sufficient, especially since Mr. Alpe admitted that the exemption is "the converse of the general charge of duty," and that it "indicates the classes of preparations that were not intended to be taxed." The question is, What are those preparations? Do common household remedies and Pharmacopœia preparations, such as tincture of rhubarb, ipecacuanha wine, Dover's powder, chalk mixture, etc., come within the scope of the exemption as remedies whose qualities, virtues and efficacies are known, admitted and approved of? It would be well if the Pharmaceutical Society endeavoured to get this point decided in a court of law.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

Library, Museum, School, and House Committee.

Attendance in Library.

	Total.	Highest.	Lowest.	Average.
January (London)	502	29	2	19

Circulation of Books.

January.	Total.	Town.	Country.	Carriage Paid.
London Library	249	152	97	£1 4s. 3d.
Edinburgh Library........	273	176	97	£0 8s. 11d.

Donations to the Library (London).

Mr. R. T. Baker, F.L.S., Sydney:—On some new species of Eucalyptus, 1901; Contributions to a Knowledge of the Flora of Australia, 1901.

Mr. F. M. Bailey, F.L.S., Brisbane:—The Queensland Flora, Part IV., 1901; Contributions to the Flora of Queensland, 1900; Plants reputed poisonous to stock, 1900; Contributions to the Flora of New Guinea, 1900-1.

Wellcome Chemical Research Laboratories, London:—Papers, Nos. 24 to 27.

Kaiserliche Leopoldinisch-Carolinische Deutsche Akademie der Naturforscher: Nova acta, tom. 79, 1901.

Radcliffe Library, Oxford:—Catalogue of books added during 1901.

Dr. O. Hesse, Feuerbach:—Ueber Laudanin, 1902; Zur Kenntniss des Ecgonins, 1902.

Dr. G. D. Hinrichs, St. Louis:—The Absolute Atomic Weights of the Chemical Elements, 1901.

Professor Dr. E. Schär, Strassburg:—Rosenthaler, Phytochemische Untersuchung der Fischfangpflanze, 1901; Springer, Beiträge zur Chemie der Alkaloide, 1901.

Mr. D. de Saint-Cyr, Hayti:—Etude sur l'Hygiène publique, 1900.

Geological Survey of Canada:—Index to Reports, 1863-84.

Mr. J. Barclay, B.Sc., Birmingham:—Southall's Materia Medica Sixth Edition, 1900.

Mr. W. West, F.L.S., Bradford:—The Alga-flora of Yorkshire, 1901.

Purchase of Book.

The Committee authorised the purchase of Travers's 'Experimental Study of Gases' for the Library in London.

Donations to the Museum (London).

Mr. M. Cashmore, Durban, Natal:—Specimen of Fragrant Wood, used by the Kaffirs as a perfume.

Sir Thomas Hanbury, K.C.V.O., Ventimiglia:—Specimens, in flower, of *Aloe succotrina*, *Eucalyptus globulus*, *Pilocarpus pennatifolius*, and of several others, illustrating the morphology of plants; also a specimen of the fruit of a variety of *Citrus*, known as Buddha's Fingers.

To the Herbarium.

Dr. D. Prain, F.L.S., Director Botanic Gardens, Calcutta:—Specimen of the Asafetida Plant of Baluchistan.

Mr. J. Lowson, Ashton-under-Lyne:—Specimen of the Assam Tea Plant in flower.

Attendance at Museum.

	Total.	Highest.	Lowest.	Average.
January	489	33	4	18

WESTERN CHEMISTS' ASSOCIATION (OF LONDON).

On Wednesday, February 19, a meeting of this Association was held at the Westbourne Restaurant, Craven Road, Paddington, W., the President (Mr. W. F. Gulliver) in the chair. There was a good attendance. The minutes of the previous meeting were read and confirmed.

The Late Mr. William Martindale.

The President said it was his painful duty to refer to the sad death of one of the earliest members of the Association, Mr. Martindale. He was a past-President of the Association, and occupied the chair during the year 1892-93, and was then the successor to the late Mr. Long. He was a member of the Committee until two years ago, and although his time was so occupied that he was obliged to resign, he always took the keenest interest in its affairs, and had its welfare at heart. In his opinion he was an ideal pharmacist, and his loss would be keenly felt by all. He then proposed the following:—

> That this Association has heard with the deepest regret of the death of Mr. William Martindale, one of the earliest members and a past-President of the Association, and desires to place on record its appreciation of the services rendered by him to pharmacy and to the Association. Further, it wishes to express the sincere sympathy of its members with Mrs. Martindale and the family in the sad bereavement which has fallen upon them.

The motion would be seconded by the Secretary, in the absence of the Vice-President (Mr J. W. Bowen), who wrote to say that he would have wished to be present to add his testimony to the loss they had sustained by the death of Mr. Martindale and to assist in conveying to the bereaved family a message of sympathy and condolence.

Mr. W. J. I. Philp, the Hon. Secretary, said it was with very painful feelings that he rose to second the motion that had been proposed from the chair, although no resolution, however worded, could adequately express the sense of irreparable loss sustained by the Association and by the whole world of pharmacy in the death of their

Esteemed Friend and Colleague,

Mr. William Martindale. He had been closely associated with Mr. Martindale for a great many years, and he might say that the more one knew of him the better one thought of him. A man of high intellectual capacity and of wide experience, he was always ready to assist any of his humbler *confrères* who sought his advice, and there were many to whom his personality was almost unknown who to-day felt that they had lost a friend. Pharmacy had lost one who was individually regarded as *facile princeps et dux;* an indefatigable worker, a hard fighter, and a generous opponent. To a wider community than that of pharmacy there has been lost a genial and courtly gentleman, equally incapable of a mean action or an ungenerous thought; while those who knew him intimately deplored the loss of a kindly, generous, large-hearted friend, who left a memory of affectionate regret and the consciousness of a void that it was not too much to say will never be filled.

Mr. J. F. Harrington supported the motion. He spoke of his association with Mr. Martindale in the capacity of a member of the Pharmaceutical Council, and in connection with the British Pharmaceutical Conference. His death was a loss to members of that Association individually and collectively, and not only to them but to pharmacists throughout the world.

Mr. H. Cracknell, as a past-President, and one who had long been officially connected with the Association, also supported the proposed resolution. He thought all would agree that they had in Mr. Martindale a typical pharmacist who would remain an example for all. He had always found him a sound, conscientious man.

Mr. T. Donald Watson, who spoke with great difficulty, said he should like to add a few words in support of the resolution in memory of their old and esteemed friend, Mr. William Martindale. When he received the news in the City of the sad death of his old friend, words failed him to express the sorrow and regret that he felt on hearing such sad news. He spoke of him as an individual, perhaps, more than as a shining light in pharmacy. Mr. Martindale was his younger apprentice; he was his companion in youth, and they had known each other up to the time of his death for something like forty-five years, and in all that time he could only say that he had always found William Martindale a true friend, straightforward and honest to the backbone.

The resolution was then silently carried, each person present standing with bowed head.

The President having announced that as a mark of respect no other business would be transacted that evening, Mr. Watson produced a photograph showing the business premises at Carlisle where Mr. Martindale and he served their apprenticeship, both of them appearing in the picture.

FORFARSHIRE CHEMISTS' ASSOCIATION.

A meeting of the Committee which has charge of the Conference arrangements was held in Dundee on Monday, February 17, Mr. Chas. Kerr presiding. The Secretary (Mr. W. Cummings) said he had been in correspondence with Mr. Ransom as to the most suitable date for the Conference, and they had agreed to recommend August 11 as the date for the reception prior to the Conference. This was agreed to by the meeting.

Mr. J. M. Hardie (Hon. Treasurer) reported that there was a satisfactory amount in hand. It was resolved to authorise Mr. Hardie to call in the outstanding subscriptions.

Mr. Kerr invited those present to accompany him on Tuesday to the City Chambers to meet Lord Provost Hunter, who had promised to receive a deputation in view of the Conference meeting in Dundee.

Deputation to the Lord Provost.

On Tuesday, February 18, at 12 noon, the following gentlemen met at the City Chambers:—Messrs. Chas. Kerr, A. B. Anderson, John Anderson, John Gray, J. M. Hardie, J. Russell, and W. Cummings, Dundee; Thomson, Lochee; W. Park, Broughty Ferry; A. Naysmith, Arbroath; B. Harley, Perth.

On arrival the members of the deputation were met by Bailie Doig, who introduced them to Lord Provost Hunter.

Mr. Kerr said that Forfarshire chemists were anxious that his Lordship would give an official welcome to the British Pharmaceutical Conference on the occasion of their meeting in Dundee in August, 1902; that such recognition would be quite in accordance with precedent, and would be very much appreciated.

Proposed Reception and Conversazione.

In his reply, Lord Provost Hunter said he was pleased to meet the deputation, and that it would afford Lady Hunter and himself great pleasure to hold a reception on Monday, August 11, for members of Conference and their friends, and at the same time entertain them to a conversazione.

Bailie Doig and Mr. James Russell having expressed their thanks to the Lord Provost for his kind offer, Mr. Kerr thanked his Lordship for receiving the deputation, which then withdrew.

BRADFORD CHEMISTS' ASSOCIATION.

The members of the Bradford and District Chemists' Association assembled at the Café Royal, Bradford, on Tuesday, February 11, for the purpose of a lantern lecture by Mr. Percy Lund. Mr. Heaton, the President, occupied the chair, and there was a large attendance of the members and their lady relatives. Mr. Lund's subject was

Nature Poets and Nature Pictures,

and he most happily associated quotations from the poets with a number of fine photographs of scenery which he had taken. At the conclusion of his lecture Mr. Lund suggested that it was a duty which all men owed to themselves to spend one day per week with Nature, and he thought that the need of such a recreation particularly applied to people who worked such long hours as chemists and druggists did.—Upon the motion of the President, seconded by Mr. Alderman Dunn, a very hearty vote of thanks was awarded to Mr. Lund for his most interesting lecture.

The Late Mr. William Martindale.

After the close of the lecture the Chairman said it was his duty to ask them to pass a vote of condolence with the widow and family of the late Mr. Wm. Martindale. He moved:—

That this meeting of the Bradford and District Chemists' Association has heard with deep regret of the removal from the world of pharmacy of Mr. William Martindale, ex-President of the Pharmaceutical Society. The Secretary is desired to convey to Mrs. Martindale and her family the sincere condolence of this Association with them in their sad bereavement.

He said it needed no words of his to tell them who Mr. Martindale was. He thought that every chemist and every doctor in the whole world almost would have heard of Mr. Martindale in connection with his work in pharmacy. He was engaged in the work connected with the promotion of the new Bill, which they all hoped was going to be passed in regard to the poison laws, and other very important work in connection with the chemists' occupation. He was sure they would all join very sympathetically in sending that vote of condolence to Mrs. Martindale.

Mr. A. H. Waddington seconded the resolution. He said he felt it was a very difficult matter indeed to properly lay before a meeting of chemists any statement of the work of the late Mr. Martindale, who up to the time of his death had been working so arduously for the benefit of the whole of the pharmacists of Great Britain. Some of them might remember a remark made by an ex-Mayor of Bradford when he was leaving office, to the effect that he would rather prefer to work out than to rot out. He thought that they might fairly say of the late Mr. Martindale that his frame of mind was similar to that—that he had worked himself out for the benefit of his fellow pharmacists. The deceased gentleman was indeed *facile princeps* amongst pharmacists. Even though many of them had never seen him or made his acquaintance personally, they all knew him and knew of his reputation. He thought that a study of that life would stimulate those of them who were younger than Mr. Martindale was to devote their lives, or some part of them, at any rate, to the important objects which he had worked for. It was interesting to observe that he commenced his public career at the age of twenty-six, and passed from teacher to examiner, from examiner to Councillor of the Pharmaceutical Society, and very soon made his mark on the Council of the Pharmaceutical Society, and became Treasurer, and afterwards President. In addition to this he took an important part in the work of the British Pharmaceutical Conference, having been President of that Association. And yet, after all that, he found opportunity to take part in the government of his own town, and so large a part that he occupied the position of Mayor. He was not only a chief among pharmacists, but seemed to have had that all round character which made a man at home in whatever sort of company he found himself, and that all round mind which enabled him to shine in whatever society he went into. In thinking over the sad event of his death he was rather reminded of the words in the Old Testament, "The fathers are fallen asleep, and the prophets where are they?" He could not help thinking that the removal of Mr. Martindale ought to be a call to the chemists of the country, the young men especially, that they should rise and take up the positions which were so frequently being rendered vacant by the removal of their old leaders. If ever they were in a position in which they especially needed leaders it was to-day. They all knew that their craft was in danger, and that an effort was being made to filch from them the only protection they had, and almost the only remuneration that there was in connection with their calling—that derived from the sale of poisons. An effort was being made to whittle away the little that was left to them, and when they saw their leaders being removed at such a time of crisis it behoved every chemist to do all that lay in his power to compensate for these losses. As to the personal aspect of the matter, he thought it was the duty of every chemists' association in the country to send resolutions of condolence to the relatives of the late Mr. Martindale.

The resolution was then passed by the members all rising from their seats.

CHEMISTS' ASSISTANTS' ASSOCIATION.

There was a "full house" at the meeting of the C.A.A. held on Thursday, February 13, at 73, Newman Street, W. The President, Mr. J. Wicliffe Peck, was in the chair. Several new members were proposed, and Mr. F. Ransom then communicated some notes on

Medicinal Plants Cultivated in Great Britain,

which are printed at 149.

The President thanked Mr. Ransom for his very interesting and instructive paper. Chemists, he said, as a rule, had no opportunity of experimenting with plant cultivation to the extent they had in the manufacture of extracts and preparations, but Mr. Ransom, being closely associated with the practical cultivation of medicinal plants, was the right person to bring the subject before the Association. He was very pleased to notice the amount of patriotism shown in regard to the plants grown in England. He did not know whether it was owing to climatic conditions, but there certainly appeared to be more American than British grown drugs used. He would like to know if it was possible, in an extract or tincture of *Hyoscyamus niger*, to tell whether it was made from the English plant or not.

Mr. Snow asked if Mr. Ransom cultivated poppies to any extent at Hitchin. He knew that a Mr. Holland used to grow poppies extensively in Lincolnshire, and he would like to know whether that was the only district where they were grown.

Mr. Franklin said in regard to English oil of lavender, certain German workers seemed to think that the French oil was the more valuable. Could Mr. Ransom say in what respect the constituents differed in the two oils?

Mr. Ransom, in reply, said the reason for so many American drugs being used was that, as they grew in a wild state, in many cases it would be quite impossible for English growers to compete with them. With regard to henbane, there was no doubt that the British extract or tincture could be distinguished from the foreign by the aroma and flavour. With reference to Mr. Snow's query, poppies were cultivated only to a small extent at Hitchin. As to the difference between English and French oil of lavender, chemists had not yet got to the bottom of the chemical constituents of the oil.

Mr. Latreille moved that a hearty vote of thanks be accorded to Mr. Ransom, who was an old patron of the C.A.A., and the members were deeply indebted to him for the interest he had shown in the Association.

The President seconded, and the thanks of the meeting were accorded with enthusiasm.

Mr. Ransom having replied, the meeting terminated.

GLASGOW PHARMACEUTICAL ASSOCIATION.

At a meeting of the Glasgow and West of Scotland Pharmaceutical Association, held on February 14, Mr. Thomas Maben, F.C.S., read a paper on

The Preparation of Antitoxic Serum.

Having referred to the history of the serum treatment, Mr. Maben quoted from the reports of Drs. Chalmers and Johnston to show the effect of its introduction in the reduction of the death-rate from diphtheria in Glasgow. Previous to its introduction in 1894 the average hospital death-rate was 42·4 per cent.; whilst in the succeeding six years the death-rate had fallen to 21·6 per cent., this showing that 250 lives had been saved by the serum treatment in those six years. The comparison was not quite so favourable in cases treated privately. Before 1894 the death-rate in the hospitals for the three years for which comparative figures are given was 40 per cent.; while in private practice it was only 29; the difference being quite in accordance with what might have been expected. Since 1894, however, while the hospital death-rate had fallen to 21·6, in cases treated privately it has only fallen to 26·6, these figures apparently proving that more use is being made of the serum treatment in hospital practice than in private practice in the treatment of diphtheria. The process of preparing serum is carried out in six stages, the first of which is the preparation of the toxin by cultivating the Klebs-Loeffler bacillus of diphtheria on blood-serum or beef bouillon. The bouillon solution is next filtered for the purpose of excluding the bacilli, the filtrate consisting of bouillon plus toxin. The potency of the toxin having been ascertained, it is injected in progressively increased doses into horses, this being the process of immunisation. Some horses become immune very quickly, others not at all, the variation being due to the idiosyncrasy of the animal. After four or six months the horse is bled from the external jugular vein, and the serum is separated after the deposit of the clot. If strictly aseptic precautions have been adopted throughout sterilisation is unnecessary, but if the blood is not collected under aseptic conditions the serum must be sterilised. This is done by the intermittent process. If serum be heated above 68° C. it will coagulate, and it is, therefore, kept at a temperature of 57° C. for one hour on each of the eight successive days, when it should be sterile, but it is well to incubate it for a day at 37° C. to see that the result is successful. The fifth stage consists in filtering the serum through sterilised filters by means of filtered compressed air, so that all through the serum never comes in contact with ordinary air. The last stage of the process, and the most important, is the ascertaining of the antitoxin potency of the serum, and this is done by administering measured doses of toxin and antitoxin to numbers of guinea-pigs. The serum is then bulbed under strictly aseptic conditions, the neck of the bulb being immediately sealed in the flame of a blowpipe. Bulbs vary in size even though they contained the same number of antitoxin units, and this is due to the fact that the serum of one horse varies from that of another. Serum does not keep good indefinitely; no matter how carefully it is preserved it deteriorates with age, and in order to guard against any risk of having a non-effective product, sufficient serum should be added to each bulb in excess of the quantity mentioned on the label to ensure that quantity being present at the end of a year from the date of testing. On the British market the serum just described is tested in the laboratories of the Royal Colleges of Physicians and Surgeons, and there certified as to its antitoxin unit potency, freedom from micro-organisms, and from an excessive amount of antiseptic, so that it is impossible for such accidents to happen as have recently happened with serum of municipal manufacture in the United States.

After a brief discussion Mr. Maben replied to questions which were addressed to him, and the Secretary then presented a report on the movement for

Early Closing.

Out of 127 circulars sent out he had received 88 replies, and all of these were in favour of shorter hours. Fourteen of them thought that no fee should be imposed for the night bell. In the circumstances, the Committee had not seen their way to go any further in the matter, and they would like to have the instructions of the meeting.

On the motion of Mr. Mackay, seconded by Mr. J. P. Gilmour, it was moved that the report be received and the Committee thanked for the work that had been accomplished.

This was agreed to.

MANCHESTER PHARMACEUTICAL ASSOCIATION.

The fifth meeting of the session was held at the Victoria Hotel on Wednesday, February 12, Mr. G. S. Woolley, the President, in the chair. After some formal business had been transacted, Mr. T. H. Wardleworth, of Liverpool, delivered a most exhaustive and deeply interesting lecture on

Jamaica,

being the result of a few months' residence in the island. The lecture was illustrated by about 100 slides. The lecturer told all about Jamaica from its earliest known history down to the present day. It was discovered by Columbus in 1495, and was held by the Spaniards until 1620, when England took it from them and had held it ever since. The French had made several efforts to take possession of the island, but Rodney effectually silenced the French guns and captured their ships, and of his signal victory the Jamaica people were very proud. His victories were equal in those waters to those of Nelson in the European seas. The trade and commerce of Jamaica were descanted upon, and the conformation of the island and its lovely natural beauties graphically described. At the close the Chairman moved, Mr. Harry Kemp seconded, and Mr. C. Johnson supported a hearty vote of thanks to the lecturer, who briefly and wittily replied.

MIDLAND PHARMACEUTICAL ASSOCIATION.

A meeting of this Association was held at the University, Birmingham, on February 6, under the presidency of Mr. John Barclay, when Dr. Hall-Edwards delivered a most interesting lecture on his

Experiences in South Africa.

The lecturer was attached to the Central Hospital of the Imperial Yeomanry at Dielfontein. He illustrated his remarks with a series of well-executed lantern slides, showing incidents of life and work at the hospital. Dr. Hall-Edwards described at length the dispensary attached to the hospital, which was situated, he said, at one end of the main building and fronting the operating theatre. It was stocked with a magnificent collection of drugs. Every known drug in the B.P. was kept at hand, as well as most of the additional things not mentioned there. In addition there were large quantities of anti-toxin—anti-diphtheria toxin, anti-typhoid toxin, and anti-enteric toxin—

and immense quantities of bitter waters, such as lime juices, presented to the hospital by various chemists up and down the country. These were found to be exceedingly useful, and they came to hand in such large quantities that those connected with the hospital were able to spare some for the "niggers," who looked upon them as wines. The prescriptions from the different wards were brought to the dispensary in the morning by the chief orderly of each ward, and they were called for again at a given time in the evening, though, of course, there were many cases in which the surgeons dispensed their own drugs. A large quantity of stock mixtures were stored, and this saved a lot of time. When the stock of any particular drug ran short a further supply was got from the Army Medical Corps base at Cape Town. In conclusion, Dr. Hall-Edwards gave the result of some of his experiments with the X-Ray apparatus, and said that during fourteen months between three and four hundred cases came under his official notice. He emphasised the great value the apparatus had been in locating in the hand, chest, legs, abdomen, and other parts of the body.

On the motion of Mr. C. Thompson, seconded by Mr. F. Barlow, the lecturer was accorded a hearty vote of thanks.

CARDIFF CHEMISTS' ASSISTANTS' ASSOCIATION.

An interesting and instructive lecture was delivered by Dr. D. R. Paterson, before the members of this Association, on Thursday, February 13, the subject being "The Effects of Quinine on the Malarial Parasite." The lecture was illustrated by lantern slides, and at the close a vote of thanks was passed to Dr. Paterson, on the motion of the President, Mr. A. B. Sparrow.

BLACKPOOL AND FYLDE CHEMISTS' ASSOCIATION.

The annual meeting was held at the Palatine Hotel, on Tuesday, February 11. Amongst those present were:—Messrs. Laurie, Turver, Billington, Ashton, Johnson, Buckley, Greenwood, Boothroyd, Mayson, J. Sankey, Secretary, and others. After the minutes of the previous annual meeting had been passed and adopted, the Secretary made his annual statement of business done, including interviewing the local candidates at the Bye-election in the Blackpool Division, and explaining the draft Pharmacy Bill, which was to be presented to Parliament, the deputation being most favourably received. The draft Pharmacy Bill had been discussed most interestedly at two of the meetings, and resolutions adopted, approving of most of the clauses, were forwarded to the Secretary of the Pharmaceutical Society and duly placed before the Council. The practical chemistry classes were very thinly attended. Circulars were sent to every chemist on the Register in this Parliamentary division, drawing attention to the advantages to be obtained by junior assistants and apprentices devoting their spare evenings to improving the intellect. The Secretary was also pleased to notice the gradual improvement in the attendance of members.

The Hon. Treasurer reported on the satisfactory balance-sheet, which showed an increased balance on the right side, although he had had an expensive year in the formation of the Society.

Officers were elected as follows:—President, Mr. Councillor Laurie; Vice-Presidents, Mr. C. H. Turver and Mr. Keeley; Committee, Messrs. Billington, Johnson, Buckley, Greenwood, and Boothroyd; Hon. Treasurer, Mr. Tom Ashton; Hon. Sec., Mr. J. Sankey.

Votes of thanks were passed to the President and Secretary, and a very amicable evening's business brought to a close.

At the end of the meeting the Secretary intimated that subscriptions for the current year became due on January 1. The members present were most anxious not to be in arrears and paid at once, and the hope was expressed that the absent members would send in their subscriptions at an early date.

DERBY CHEMISTS' ASSOCIATION.

The annual meeting of the Derby and District Chemists' Association, which was postponed from December 4, was held on February 13 at Smith's Restaurant, Derby. There was a good attendance of members, Mr. R. W. Stevenson presiding. The Secretary presented a statement of accounts for the past year, which showed a balance in hand of £2 14s. 11d.

The election of officers was the next business, and Mr. Stevenson was unanimously re-elected President and Mr. Southern, of Belper, Vice-President, for the present year. It was resolved that Messrs. Dawson, Hefford, and Warrington, be elected Vice-Presidents, and that the following gentlemen form the Committee:—Messrs. Elmitt, Haynes, Hoare, and Pembleton. The Hon. Secretary, Mr. Cope, was re-elected.

Various matters of interest were discussed. The pharmacy and materia medica classes held in connection with the Technical College were reported to be doing useful work. These classes, together with those for chemistry, botany, and physics, provide nearly all the teaching that is required by pharmaceutical students, and it is to be regretted that so few chemists' assistants and apprentices avail themselves of them.

SOCIETY OF PUBLIC ANALYSTS.

The twenty-seventh annual dinner of this Society was held at the Hotel Cecil, on Wednesday, February 12, Dr. J. Augustus Voelcker, the President, in the chair. The company, according to the *Times* report, included Sir Ernest Clarke, Secretary of the Royal Agricultural Society of England; Mr. T. H. Elliott, C.B., Secretary of the Board of Agriculture; Mr. J. Lithiby, Assistant Secretary of the Local Government Board; Dr. T. E. Thorpe, Principal Chemist of the Government Laboratories; Mr. W. R. Bousfield, K.C., M.P., Dr. H. E. Armstrong, Dr. J. H. Gladstone, Dr. W. A. Tilden, Professor J. Millar Thomson, President of the Institute of Chemistry; Mr. G. T. W. Newsholme, President of the Pharmaceutical Society; Mr. C. Hawksley, President of the Institution of Civil Engineers; Mr. Otto Hehner; Mr. E. W. Voelcker, Hon. Treasurer; and Mr. E. J. Bevan, Hon. Secretary.

Mr. Bousfield, responding to the toast of "The Houses of Parliament," suggested that the Local Government Board should have power to make regulations fixing the amount of extraneous substances which might be added to food.

Mr. Otto Hehner, in proposing the toast of "The Government Departments," alluded to the foreign criticisms on the British policy in South Africa, and said that nothing but a feeling of deep disgust existed amongst the large and influential German colony in England at the low and pitiable exhibition which had been made abroad for some time.

Mr. Elliott, in responding, alluded with regret to the illness of Mr. Hanbury, which was the cause of his absence. He thought that what had happened since the last Sale of Food and Drugs Act came into operation showed that not only the Government departments but the local authorities and the public appreciated the services which public analysts were able to render in the interests of the consumer. Looking back over a period of ten years, he found that whereas in 1890 27,000 samples of different foods and drugs were taken, in 1900 no fewer than 63,000 samples were taken and analysed, and that whereas in 1890 one sample was taken for every 946 of the population, in 1900 one sample was taken for every 461 of the population. That was a great stride in advance, and showed the substantial results which had been attained by the co-operation of local authorities with the Society of Public Analysts and with individual analysts—results which were not only advantageous to the public, but to the honest producer of an article which ought not to be put into competition with an adulterated and fraudulent article. Dr. THORPE also responded.

The PRESIDENT, responding to the toast of the Society, proposed by Dr. TILDEN, said that the Society represented not only public analysts, numbering among its members 80 per cent. of the public analysts throughout the country, but also analytical chemists and, indeed, all branches of the chemical industry. They rejoiced at the fact that the Society had much to do with the ultimate framing of the new Food and Drugs Act.

Other toasts followed, Sir ERNEST CLARKE and Professor ARMSTRONG responding for that of "the Guests."

NOTES IN PARLIAMENT.

THE ROYAL COMMISSION ON TUBERCULOSIS.—It has already been stated in these columns that experiments under the auspices of the Royal Commission on Tuberculosis are to be conducted at two farms. It now appears, from a reply made by Mr. Long to Sir W. Foster, that the farms are situated at Stansted, in Essex. They belong to Sir Jas. Blyth, who has most generously placed them free of charge at the disposal of the Commission for experimental work. The Government has expressed to Sir James their warm appreciation of his act, which will greatly facilitate the labours of the Commission. Arrangements have been made for the occupation of the farms for a period of three years, though it is hoped that the inquiry will be completed within a shorter time. Laboratories and other buildings necessary for the experiments have been erected.

VACCINE FROM MONKEYS.—The President of the Local Government Board was a few days ago asked by Mr. T. Bayley to say "whether his attention had been drawn to the use of small-pox virus passed through pustules on monkeys as a source of vaccine by Dr. S. Monckton Copeman, Medical Inspector Local Government Board, who stated that a considerable number of children had been vaccinated with vaccine thus obtained; and whether the Local Government Board had given its medical inspector leave to vaccinate children with vaccine of such a nature." The reply showed that Mr. Bayley had been misinformed. Dr. Copeman has made experiments of the kind referred to, but the Local Government Board had not given him permission to vaccinate children with lymph yielded by the monkeys, and Mr. Long understands that, as a matter of fact, he has not done so. In all cases vaccinations under the auspices of the Board have been performed with lymph derived direct from the calf.

FOOD PRESERVATIVES.—Asked by Mr. Joyce whether he has taken any steps to carry out the recommendations of the Preservative Committee to standardise the percentage of preservatives allowable in other articles besides butter and milk, Mr. Long has stated that legislation would be necessary for the purpose indicated. He has not arrived at a decision as to the course which he will recommend.

FOOD ADULTERATION.—On Monday, General Laurie, in the Commons, asked the President of the Local Government Board whether his attention had been called to the report of the public analyst for the Borough of Paddington for the quarter ending June 24, 1901, in which it was stated that, on a conviction for adulteration of milk by adding 22 per cent. of water, the magistrate inflicted a fine of 5s.; and, whether, in view of other similar prosecutions by local authorities for adulteration of milk and butter which had either failed in consequence of the terms of the contract or other such reasons or had resulted in either only the imposition of costs or modified fines, he could, by legislation or by other means, enable the local authorities to enforce the law against adulteration, especially of those articles in constant demand among the humbler classes. From Mr. Long's answer it appeared that he had not received the report referred to. He has no authority to intervene in the manner suggested, nor does it appear to him that he can undertake to promote legislation on the subject. It must rest with the discretion of the magistrates whether a fine should be inflicted in any particular case, and if so what the amount shall be.

ROYAL ARMY MEDICAL CORPS.—Dr. Thompson, in the House of Commons, on Tuesday, asked the War Secretary whether before the issue of the promised Royal warrant for reform of the Royal Army Medical Corps, he would carefully consider the objections raised, both by the officers of the Royal Army Medical Corps and the medical schools, to the recommendations of the late Departmental Commission, as regards examinations for promotion; and if he would make such alterations as would limit these examinations to the real requirements of the service—viz., for promotion to the ranks of Major and Lieutenant-Colonel, as suggested by the Sub-Committee appointed by the Council of the British Medical Association to consider the reform of the Army Medical Service.—Mr. Brodrick answered that the only examinations in purely professional subjects will be those for Major and Lieutenant-Colonel. The examination of Lieutenants for the rank of Captain will be in Corps and Service duties only. In reply to another question Mr. Brodrick said that an officer who fails to pass the examination for the rank of Lieutenant-Colonel will be permitted to complete twenty years' service and retire on £1 per diem pension.

LORD AVEBURY'S SHOP HOURS BILL.—The House of Lords have rejected the Bill of Lord Avebury for the Early Closing of Shops by fifty-seven to twenty-six. The Bill was originally introduced in pursuance of a resolution of the House of Commons in 1893. It proposed that two-thirds of the shopkeepers in any locality should be authorised to memorialise the local authority, that the local authority should then be empowered to close the shops at a certain hour, and that the local authority should also be empowered to enact a weekly half holiday. Lord Avebury stated the familiar arguments on behalf of the Bill with all his well-known moderation and good sense. The opposition to the measure was led by the Earl of Wemyss, the most energetic champion of individualism and of the interest of the Liberty and Property Defence League in the House. He moved an amendment to the effect that the compulsory regulation of the hours of labour of full-grown men would be an undue interference with individual liberty, hurtful to trade and industry, and a dangerous departure from sound principles in the government of a free people. The views of the Home Office were expressed by Lord Belper, and were, on the whole, benevolent to the main object of promoting health by reducing shop hours, but they were hostile to the particular measure before the House. The Bill was supported by Lord Spencer, and Lord Rosebery also interposed in the debate, but apparently with no other object than to quiz the Government on their neglect to legislate in the matter themselves.

FORMULÆ WHICH HAVE BEEN PROVED.

FROM A CHEMIST'S RECIPE BOOK.

The following formulæ are for preparations of the most varied nature, but all of them have been proved by the experience of years, and they can be confidently recommended as yielding products of a thoroughly satisfactory character.

Tic Mixture.

Ammonium Chloride	5 oz.
Cochineal	¼ oz.
Oil of Cloves	40 m.
Water to	4 pints.

Coarsely powder the ammonium chloride and cochineal, add the oil of cloves to the mixed powders, mix thoroughly, add the water gradually until solution is effected, then filter. Dose: One tablespoonful every three or four hours.

Fever Mixture.

Sodium Bicarbonate	120 grains.
Soda Tartarata	240 grains.
Spirit of Nitrous Ether	½ fl. oz.
Solution of Ammonium Acetate	1 fl. oz.
Syrup	1 fl. oz.
Water to	8 fl. oz.

Dissolve the powders in the water, then add the remaining ingredients and filter if necessary. If the mixture is to be kept for any length of time, the syrup may be replaced by an equivalent quantity of saccharin. Dose: One to two tablespoonfuls every two or three hours.

Pile Ointment.

Galls, in powder	1½ oz.
Camphor ,,	1 oz.
Opium ,,	90 grains.
Lead Acetate, in powder	60 grains.
Lard	6 oz.

Mix the powdered opium and galls, then add the camphor, freshly powdered by the aid of rectified spirit, and allow the spirit to evaporate. Add the lead acetate to the dry powder and, finally, mix with the lard.

Lime Cream.

Almond Oil	1½ lb.
Solution of Potash	1¼ fl. oz.
Oil of Lemon	¼ fl. oz.
Water	4 fl. oz.

Add four-fifths of the solution of potash to the oil, shake thoroughly, then add the water gradually, shaking after each addition. Next, add the remainder of the solution of potash, shake well, then add the oil of lemon, and again shake thoroughly.

Liquid Cochineal.

Carmine	60 grains.
Strong Solution of Ammonia	6 fl. dr.
Rectified Spirit	1 fl. oz.
Distilled Water to	5 fl. oz.

Reduce the carmine to powder, add the solution of ammonia, mix thoroughly, then add 3 fl. oz. of water, and, finally, the spirit. Shake well and allow to stand for some time, then filter, and add water to make up to the specified volume.

Rose Glycerin.

Glycerin	¼ lb.
Powdered Boric Acid	¼ oz.
Rectified Spirit	¼ fl. oz.
Liquid Cochineal	1 fl. dr.
Ess. Bouquet	2 fl. dr.
Otto of Roses	1m.
Water to	8 fl. oz.

Dissolve the acid in the water, add the liquid cochineal and glycerin, then add the spirit and perfumes, previously mixed. After shaking thoroughly, allow to stand for some days, then filter until perfectly bright.

Lavender Water.

Oil of Lavender (Mitcham)	3½ fl oz.
Essence of Bergamotte	1 fl. oz.
Essence of Musk	½ fl. oz.
Tonquin Beans	2 oz.
Rectified Spirit	6½ pints.

Crush the Tonquin beans and add to the other ingredients, previously mixed. Allow to stand for a few days, with occasional agitation, then add—

Distilled Water	1½ pints,

and, after shaking well, put aside for some weeks before filtering.

Cold Cream.

White Beeswax	2 oz.
Almond Oil	8 fl. oz.
Rose Water	4 fl. oz.
Powdered Borax	60 grains.
Otto of Roses	*q.s.*

Melt the wax in the oil and dissolve the borax in the water by the aid of heat. When both solutions are at about the same temperature, add the aqueous solution gradually to the wax and oil, and stir continually until the mixture begins to stiffen. Then add the otto of roses, drop by drop, and again stir the mixture until it is cold. The addition of

White Soft Paraffin	2 oz.

just before adding the perfume, has the effect of making the product beautifully smooth and enables it to be kept unaltered for an indefinite period.

Lemon Syrup.

Tincture of Lemons	1 fl. oz.
Citric Acid	1½ oz.
Powdered Sugar	18 oz.
Water	10 fl. oz.

Powder the acid and mix with the sugar, then add the tincture, mix thoroughly, and add the water gradually.

Washing Liquor.

Soft Soap	½ lb.
Strong Solution of Ammonia	2 lb.
Water to	2 gallons.

Dissolve the soap in the water by the aid of heat, then cool and add the solution of ammonia.

Silver Polish.

Prepared Chalk	2 oz.
Oil of Turpentine	4 fl. oz.
Strong Solution of Ammonia	4 fl. oz.
Water to	1 pint.

Reduce the chalk to powder, add the oil of turpentine and mix thoroughly, then add the solution of ammonia, shake well, and gradually add the water, shaking after each addition. A little polishing rouge may be added if desired.

French Polish.

Orange Shellac	2 lb.
Pale Amber Resin	6 oz.
Oxalic acid	¼ oz.
Wood Naphtha	1 pint.
Methylated Spirit	3 pints.

Crush the shellac, resin, and oxalic acid, dissolve them in the mixed spirits with frequent stirring, and, when solution is complete, strain the polish through muslin.

Glaze.

Benzoin (picked)	¼ lb.
Gum Thus	1 oz.
Methylated Spirit	1 pint.

Crush the resins, add to the spirit, shake frequently until dissolved, and then filter through paper. Palembang benzoin makes a very satisfactory glaze.

Brush Polish.

Garnet Shellac	2 lb.
Amber Resin	12 oz.
Wood Naphtha	1 pint.
Methylated Spirit	3 pints.

Crush the shellac and resin, dissolve in the mixed spirits with frequent stirring, and strain the varnish through muslin.

Red Brush Polish.

Garnet Shellac	1½ lb.
Magenta Crystals	60 grains.
Kino	5 oz.
Methylated Spirit	4 pints.

Crush the shellac, n dissolve the solid ingredients in the spirit with frequent stirring, and strain through muslin.

White Polish.

White Lac	1½ lb.
Powdered Borax	1 oz.
Wood Naphtha	3 pints.

The lac should be thoroughly dried, especially if it has been kept under water, and, in any case, after being crushed, it should be left in a warm place for a few hours, in order to remove every trace of moisture. The crushed lac and borax are then added to the spirit, and the mixture is stirred frequently until solution is effected, after which the polish should be strained through muslin.

Turpentine Varnish.

Amber Resin	7 lb.
Oil of Turpentine	5 pints.

Melt the resin carefully and add the turpentine with constant stirring. On repeating the operation the outside of the vessel should be rubbed with whiting in order to minimise the risk of fire.

Red Spirit Stain.

Kino	6 oz.
Magenta Crystals	60 grains.
Camwood	2 oz.
Methylated Spirit	1½ pints.

Mix and digest for a few days, with frequent agitation, then add

Methylated Spirit, 1 pint,

after which the solution should be filtered.

Oak Stain.

Raw Sienna, ground in water	4 oz.
Burnt „ „ „	2 oz.
Vandyke Brown, ground in water	2 oz.
Boiling Water	1 pint.

Mix the pastes and add the boiling water gradually.

Baking Powder.

Tartaric Acid	12 oz.
Sodium Bicarbonate	1 lb.
Rice Flour	4¼ lb.

Dry the acid and sodium bicarbonate thoroughly, then powder and mix separately with half of the rice flour in each case. Finally mix together, and pass through a sieve.

Pickling Spice.

Capsicums	4 oz.
White Pepper	4 oz.
Long Pepper	4 oz.
Black Pepper	8 oz.
Pimenta	8 oz.
Jamaica Ginger	1 lb.
Mustard Seed	8 oz.

Mix thoroughly, without crushing.

COMMERCIAL INTELLIGENCE.*

The Subject of Mosquitos and Malaria is attracting considerable attention in Italy, and more especially in the Naples Consular district, where a large area is subject to malaria. Consul Neville Rolfe (Naples) in his latest report states that next to Sardinia, the province of Basilicata is the largest malarious tract in Italy, and, therefore, the most interested in the extermination of the disease. The most fatal season occurs in the months of August and September, but, further south, the dangerous season continues longer, so that in Basilicata security can rarely be enjoyed or reckoned upon until the month of October is past. Mosquitos, he remarks, dislike wind, and when it is high they take refuge where they can. Hence they are not transported by wind as has been often supposed, but they move from place to place on or about men and animals, and any baggage which attracts them, a fact which explains isolated cases and epidemics which have occurred in places distant alike from marshes and stagnant water. There is, he states, a special aniline dye which, when diluted, even to the extent of 0·00031 per mil is said to kill the larvæ. The well-known pastilles and powder, similar to ordinary insect powder, are also mentioned, and it is stated that valerian root, powdered and mixed with the powder made from the flowers of *Pyrethrum roseum*, renders it more efficacious. Mr. Neville Rolfe also reports that experiments have been made in the past summer by Professor Grassi to combat malaria by the use of drugs. In this he is said to have obtained a great measure of success, but the British Consul thinks that the expense of the drugs and the difficulty of getting the large quantity necessary, taken at regular times, will form an insuperable difficulty in the case of the peasants. Having selected one of the most malarious places in Italy, Ostia, at the mouth of the Tiber, Professor Grassi and his staff administered six pills a day to adults, and a proportionate dose to children, the pills being composed of a compound called "Esanofele," said to be a harmless drug composed of quinine, arsenic, iron and bitter herbs. Which salt of quinine or iron and the proportions used of each of them Mr. Neville Rolfe states has not yet been disclosed, but Dr. Grassi, in his recent work, speaks most highly of the results, and the tabulated statistics of the Ostia treatment are said to be very favourable.

The Stock of Olive Oil in Italy, Consul Neville Rolfe, in a report dated February, 1902, states, has probably never before been at such a low ebb. As long ago as last June it seemed doubtful whether there was oil enough on the market to fulfil the engagements entered into by merchants, and the future of the article seemed to depend entirely upon the new crop. In normal circumstances the fruiting of the trees would have led to a decline in prices for spring shipments, but the effect last year after so many disappointments was scarcely perceptible. The crop promised well, and did well. In fact, in some parts of the country a record crop was expected as late as the end of September, when heavy rains swept the fruit from the trees, and rendered it so gritty that it had to be washed before it could be put into the presses. Where this did not happen the rains of October greatly delayed the ripening of the fruit, and caused the crop to be about a month behind its usual time. The fruit, however, was well nourished and perfectly sound, especially in the interior of the province of Bari, but more particularly so on the higher lands, which have been free from the worm, which has caused a good deal of damage along the seaboard, especially in the districts of Fasano, Ostuni, and the Capo di Lecce. Districts where the crop was good, it is stated, will produce oils of such a high class as have not been placed on the market for many years past, particularly since the harvesting was favoured by fine dry weather. In respect of quality, the British Consul thinks, the out-turn of the crop promises to be highly satisfactory, but in point of quantity it will probably leave much to be desired, as the crop varies widely in the different districts. The yield of oil per ton of olives, taken all round, it is thought, will be light, because the fruit was so soaked with rain that it would contain a great deal of water. On the whole, the yield is expected to be equal to about two-thirds of an average crop.

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* From Consular Reports and other official sources.

The Almond Crop of Southern Italy is reported to have been extraordinarily good, and as this affects small holders and peasant proprietors its success is said to have put money into the pockets of the poorer class of agriculturists, and been extremely beneficial to the whole district. It is expected when the statistics are published that the export of this article will be largely ahead of those of recent years.

"Caustic Rain."—Such is the heading to a paragraph in the latest report on the trade of Naples, for the year 1901, in which it is stated that a singular phenomenon occurred last year, which caused considerable damage in the villages around Vesuvius. According to this report the volcano is constantly pouring out a large cloud of steam from its summit. This steam is highly charged with hydrochloric acid, and showers of rain falling through it became impregnated with the acid, and falling on the growing crops burnt all the young shoots. No doubt, Consul Neville Rolfe remarks, some special atmospheric or other conditions must have been present, because the mountain has poured out its steam, and the rain must have fallen through it for centuries without the same result occurring, and in fact the phenomenon only lasted for about a month in the spring. During that month, however, the sprouting vines suffered very severely, both leaves and buds being shrivelled up, and having the appearance of being burnt. In the case of the villages nearest to the mountain, the cereals growing below the vines were also seriously damaged, and in some cases destroyed. Fortunately, the vines which were the most forward suffered the least, but the damage was so widespread that it reached Palma, near Nola, where the produce consists of hazel nuts, which are indigenous to the district, and are grown for export in large quantities. These were practically ruined, all the young shoots being destroyed. Under a law still in force the Government is liable to indemnify sufferers from volcanoes by remission of the whole or a part of the land tax. This has been done in many cases in the present instance, and has apparently worked well, but the law under which it was granted, it is stated, will soon be obsolete, and a new law of 1886 will come into force, whereby all persons living in the neighbourhood of volcanoes will have an annual reduction of their land tax and stand by their own accidents.

The Institute of Pharmaceutical Chemistry in connection with the Berlin University has hitherto possessed temporary accommodation only, but according to Dr. Frederick Rose's supplementary report on chemical instruction and chemical industries in Germany, a new building is at present in course of erection. The building expenses, he states, are estimated at £26,250, without the cost of the site, which, he thinks, may amount to from £7,000 to £10,000. The current annual expenditure for instruments, apparatus, etc., in the new institute is to be raised from £225 to £750. In his concluding remarks Dr. Rose says:—"It is scarcely necessary to add any comments to the details of chemical instruction dealt with in the present supplementary report. The figures are eloquent enough, and show clearly the large proportion of chemical instructors to students, the increase in the number of students, and the facilities provided for instruction in almost all conceivable branches of chemistry. Finally, they show—and this is perhaps the most significant indication of all—that the Prussian State, in spite of the expenditure already incurred, and the leading position attained by the chemical industries, is far from regarding the present admirable means of chemical instruction as adequate for future contingencies, but is at all times, upon representations from the requisite industrial and educational quarters, prepared for further lavish outlay should future developments reveal this necessity."

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

Liniment of Soap.

At Bow Street Police Court, before Mr. R. H. B. Marsham, on February 14, Mr. F. W. Beck, who was instructed by the Chemists' Defence Association, again claimed the right of chemists and druggists to sell as "soap liniment" a preparation compounded with methylated spirit. The case should have been heard a fortnight previously, but the defendant, Mr. A. B. Spink, 134, Theobald's Road, W.C., had obtained an adjournment in order to submit the reserve sample to Somerset House.

Mr. Walford, on behalf of the Holborn Borough Council, stated the case for the prosecution, which was, briefly, that the defendant had sold, to the prejudice of the purchaser, 4 ozs. of liniment of soap containing 40 per cent. of methylated spirit. The British Pharmacopœia, the standard for all medicines sold, said nothing about the use of methylated spirit, and it was therefore a foreign ingredient.

The Inspector who effected the purchase, and his assistant, were closely cross-examined as to whether they were not told that the methylated liniment was being supplied. The assistant allowed that a conversation did take place before purchase, but both witnesses denied that they were told the liniment was not B.P. until after the purchase was completed.

Mr. James R. Colwell, F.I.C., Public Analyst for the Holborn Borough, said that his analysis of the sample submitted to him was based on the standard fixed by the British Pharmacopœia. Cross-examined by Mr. Beck, he said he would expect to get cane sugar from the grocer and turpentine from the oilman, of B.P. quality, but he would not expect always to get brandy of the Pharmacopœia strength and quality, unless specified as "B.P." He thought it was evidently not the custom of chemists and druggists to supply the methylated liniment, because only three out of thirteen samples bought the same day contained methylated spirit. He would not admit that the only use of the spirit was as a solvent, but, as a chemist, he could not point out where lay the inferiority of the methylated liniment, especially as only 10 per cent.—the wood naphtha—of the methylated spirit which he found was a foreign ingredient. The practice of making the liniment with methylated spirit at the London and University Hospitals, as quoted in the London Hospitals' Pharmacopœia, was put to him, but he said he did not recognise those standards. When the Inland Revenue permit to use methylated spirit in the manufacture of soap liniment was shown him he said that the use of a duty-free spirit reduced the price, but he could not say whether it reduced the medicinal value of the liniment. Using the colour test for methyl alcohol, he was not prepared to swear to more than 40 per cent. of methylated spirit in the sample.

The prosecution having closed their case, the further hearing was adjourned to February 28 next.

Butter or Margarine?

Mr. Charles Estcourt, the Manchester City Analyst, recently certified before the city magistrates that a sample of butter, which had been purchased from Messrs. Isaac Booth and Co., wholesale provision dealers, contained 17·40 per cent. of foreign fat, and was not, in fact, butter at all, but margarine. The defendants got the case adjourned in order that a sample of the same pound of butter could be analysed at Somerset House, also by Otto Hehner, of London. The matter had been taken up by the Dutch Government, who had submitted samples of the same butter to the most eminent analysts in the country. The result was that all these analysts declared the butter pure. The Manchester Corporation, who had prosecuted, then withdrew from the case, and the Manchester magistrates allowed the defendants £10 towards their costs.

RECENT PATENTS.*

The Peroxides of Zinc and Magnesium.

By this invention compounds of the oxides of zinc and magnesium are converted into the corresponding peroxide compounds by the aid of alkaline solutions of hydrogen peroxide. Thus, peroxide of zinc may be obtained by adding to a clear alkaline solution of a zinc salt, which has been supersaturated with ammonia, slightly more than the molecular quantity of hydrogen peroxide. The result is that the solution becomes cloudy, due to the gradual formation of a heavy granular precipitate of zinc peroxide. The manufacture of magnesium peroxide is quite analogous except that the addition of ammonium salts is made in order to keep the solution clear. This discovery of the behaviour of the salts of zinc or magnesium towards hydrogen peroxide is new, for according to Haas ('Berichte der Deutschen Chem. Gesellschaft,' 17, 2,252) "peroxides are never separated out, provided that the precipitation of oxyhydrates has been prevented with sufficient care, either directly, or on the addition of alcohol, or on concentration in a vacuum." If, however, a solution of a zinc or magnesium salt is mixed with hydrogen peroxide, and at the same time with sufficient alkali to render the precipitation complete, the peroxides separate out in the form of basic peroxide salts; thus if zinc sulphate is taken as the raw material a basic sulphate of zinc peroxide is produced. Such basic peroxide salts have hitherto been unknown, but are commercially useful, because they contain as much peroxide oxygen as corresponds to a 25 per cent. solution of hydrogen peroxide, and they constitute dry and stable powders which are quite free from danger. Moreover, they may be produced by very dilute, say ¼ per cent., solutions of hydrogen peroxide, thus rendering such dilute solutions commercially useful. (Richard Wolffenstein, 14, Landgrafenstrasse, Berlin, W., Germany, through Fairfax and Wetter, 37, Essex Street, Strand, London W.; No. 754 of 1901.)

Lettubrin, A Disinfectant Compound.

The following compound, which has been named "lettubrin," is intended as a disinfectant, and to be used for destroying all kinds of vermin, such as moths, bugs, cockroaches, in walls and other places. This disinfectant is produced by mixing together carbolic acid, 15 parts; concentrated acetic acid, 12 parts; benzine, 1 part; 96 per cent. alcohol, 72 parts; all by weight. (Anders Strandh, 12, Karlbergsvargen, Stockholm, through W. P. Thompson and Co., 6, Lord Street, Liverpool; No. 508 of 1901.)

An Improved Deodoriser.

This deodoriser for sanitary purposes is prepared from past moss, which is reduced to a meal or coarse powder. (John Kerr, Breconrae, Ruthwell, R.S.O., Dumfriesshire; No. 3,548, of 1901.)

Manufacture of Artificial Sponges.

This invention relates to a new manufacture of artificial sponges from leather, applicable more particularly as a substitute for loofahs. It is claimed that the products are durable and cheap, having an appearance similar to ordinary sponges. Finely shredded sole leather is defatted and formed into an elastic mass, with caoutchouc, the mass being provided with pores, cavities, or channels, whereby it is enabled to absorb liquid and retain it. In brief, the process is as follows:—fine leather fibres, freed from fat, are saturated with sulphur milk, and, after drying, soaked in a mixture of liquid caoutchouc and ammonium carbonate. The tough compound thus produced is heated gradually from 125° to 140° C., whereby on the one hand pores or channels are formed in the mass by the escape of the gases evolved as a result of the decomposition of the ammonium carbonate, and, on the other hand, the caoutchouc becomes vulcanised by the sulphur. (Carl Paulitschky, 14, Wienstrasse, Vienna V., Austria, through Abel and Imray, Birkbeck Bank Chambers, Chancery Lane, London, W.C.; No. 18,808, of 1901.)

Obituary.

Adams.—On February 14, Hugh Adams, Chemist and Druggist, Weston-super-Mare. Aged 76.

Ashley.—On February 10, William Ashley, Chemist and Druggist, Derby. Aged 69. Mr. Ashley, who was a member of the Pharmaceutical Society, had suffered from heart disease for some time, but his death occurred unexpectedly, as he had recently seemed to be much better.

Harwood.—On February 15, Ebenezer Green Harwood, Chemist and Druggist, Bolton. Aged 70. Mr. Harwood was apprenticed with the late Mr. George La French, of Cheapside, Bolton, chemist to the late Prince Consort, and after leaving Mr. La French he commenced in business in Newport Street, where he practised for many years. Attaining a competency he retired from business, subsequently devoting much time to the public service. He was a Councillor and Alderman for twenty-one years, during which he acted as Chairman of the Scavenging and Sewage Committee and Chairman of the Watch Committee, and in 1882 was elected Mayor, a position he held for two years. In 1885, he was placed on the Commission of the Peace for the Borough. He was a prominent Freemason, having served in various offices in the local Lodge, including that of W.M.

Mackenzie.—On February 8, Alexander Mackenzie, Chemist and Druggist, Edinburgh. Aged 40.

Samways.—On February 6, William Samways, Chemist and Druggist, Gillingham. Aged 75.

Stebbing.—On February 10, Walter Stebbing, Chemist and Druggist, Lowestoft. Aged 58.

Walker.—On February 13, Henry John Walker, Chemist and Druggist, Bath. Aged 80. Mr. Walker, who was one of the oldest citizens of Bath, was connected with the firm of Walker, Raggatt, and Co., mineral water manufacturers, and had taken an active interest in local affairs for many years, having been a member of the City Council for fifteen years, a member of St. Michael's Burial Board for thirty-eight years, a member of the Bath Floral Fête and Band Committee for forty-two years, and rector's warden at St. Michael's Church for thirty-six years. He was also a prominent Freemason.

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*Abstracted from the *Illustrated Official Journal* (*Patents*) and from specifications furnished by the Patent Office. A copy of any original specification can be obtained from the Comptroller-General, Patent Office, 25, Southampton Buildings, Chancery Lane, W.C., by sending 8d. in stamps, or a Patents Form, Cl (which can be obtained at the principal Post Offices at the same price) and stating the number and year of the required specification.

THE STUDENTS' COLUMNS.

Lectures in Modern Chemistry.

Professor Ramsay, F.R.S., is giving a course of lectures at the University College, London, on the modern developments of chemistry. Special importance is attached to this series of lectures for two main reasons—(1) because many of the subjects dealt with have so far been incorporated into only the most recent text-books; and (2) because many of the methods described are such as have been called into actual use during the classic work of Professor Ramsay, Professor Norman Collie, and Dr. Travers on the newer constituents of the atmosphere—viz., argon, krypton, xenon, neon, and helium.

At the outset Professor Ramsay showed that there have been since John Dalton three distinct epochs in the history of chemistry. First came the classification of the inorganic elements and their compounds, due to the work of Berzelius and others. The rise of organic chemistry marks the beginning of the second epoch, with which may be connected the names of Liebig, Wöhler, and Frankland, to name but three out of a host of brilliant investigators. Thirdly, we have the dawn of physical conceptions and the growing adoption of physical methods. This epoch is not yet over, and the workers have been many, of whom Gladstone, Arrhenius, Ostwald, and Van t' Hoff were mentioned as types. In each epoch two stages may be made out, the first of which was marked by the discovery of laws, and the second in which exceptions to these laws were found. This is readily seen in the case of the law of Boyle, which at first was considered to hold good for all gases under all conditions. By degrees, however, it was found by Regnault and others that Boyle's law is not rigorously true. Thus, at high pressure some gases diminish in volume more than air; again, it was ascertained that the higher the temperature the less is the deviation from Boyle's law.

Professor Ramsay then passed to a consideration of the various methods of determining

ATOMIC WEIGHTS.

He pointed out that atomic weights and equivalents are not necessarily identical, but when they differ their values form a simple ratio. The three principal methods employed are (1) the method which depends on the ratio of the two specific heats; (2) that in which the specific heat is found and the law of Dulong and Petit applied; and (3) by finding the molecular weights of several compounds containing a given element. The lecturer next considered at some length the first method of determining atomic weights, by finding

THE RATIO OF THE TWO SPECIFIC HEATS.

This method is of great service in the case of gases like argon and its congeners, which have only been obtained in small quantities. In order to pave the way for a theoretical explanation an experiment, devised by Kundt and Warburg, was then performed, to find the ratio of the two specific heats of carbon dioxide. The wave length of sound in air was first determined in a tube known as a Kundt's tube. This tube, which is also of much service in acoustics, consists of glass, into one end of which is fused a glass rod projecting some distance into the air and into the tube. The end within the tube is made to almost fit by means of a thickening of the glass. A small quantity of a fine powder, *e.g.*, lycopodium, is placed in the tube full of the gas, and the outer portion of the glass rod rubbed with a piece of cotton wool moistened with alcohol. The air in the tube is set into vibration like the air in an open pipe, and at intervals heaps of lycopodium form. Each interval marks a half wave-length of the sound in the given gas. By counting the number of waves n and multiplying by the wave length λ, the velocity of sound U in the gas is computed, the formula being $U = n\ \lambda$ In the experiment there were 10 half waves, the average length being 19·9 Mm. The air in the tube was then replaced by carbon dioxide, and the experiment repeated, the average length of half a wave being 16 Mm. The velocity of sound in air and in carbon dioxide was thus calculated. At this point a digression was made in order to explain the theory of the method as applied to the finding of the atomic weight. The velocity of sound, v, in a gas can be theoretically computed from the formula $v = \sqrt{\frac{E\gamma}{D}}$ where $E =$ the coefficient of elasticity of the gas, D its density, and γ the ratio of the two specific heats—*i.e.*, the ratio of the specific heat at constant pressure to the specific heat at constant volume. This expression is multiplied by γ because it is considered that the compressions and rarefactions of a gas associated with the passage of sound are of too brief a duration to allow of the heat generated being disposed of. Hence the effect is adiabatic; the heat is employed in doing internal work; the retention of the heat thus increases the pressure of the gas, so that E is increased in value to $E\gamma$. It is supposed that the amount of work expended in producing intra-molecular motions increases with increasing complexity of the molecules, and, conversely, decreases as the molecules are more simple. A molecule of mercury is believed to contain only one atom; hence the internal work done in the case of this element would be simpler than in the case of an element of which the molecule contained two atoms, and consequently possessed the power of vibrating in more than one plane of motion. In the case of mercury the ratio of the two specific heats has been theoretically computed and experimentally calculated (by Kundt and Warburg's method) to be 1·66. Without going into the kinetic theory, it may be stated that with monatomic molecules, as the heat received only increases velocity, the specific heat at constant pressure, $Cp = 5$, and that at constant volume, $Cv = 3$, whence $\gamma = \frac{Cp}{Cv} = \frac{5}{3} = 1{\cdot}66$. Since molecules having more atoms than one will absorb more heat for the same rise of temperature, a portion of the heat being employed within the molecule in changing the relations of the constituent atoms, it follows that the specific heat at constant pressure is increased by a certain amount, say m, and likewise that at constant volume. Hence, γ becomes $\frac{5 + m}{3 + m}$, a ratio which is less than $\frac{5}{3}$ or 1·66. Hence for molecules consisting of more than one atom the ratio is less than 1·66. The ratio for molecules having two atoms—*e.g.*, oxygen—is 1·4; for tri-atomic molecules—*e.g.*, carbon dioxide—1·28; and for tetratomic molecules—*e.g.*, ammonia gas—1·17. It has been experimentally determined that the five new gases of the atmosphere have the same ratio as mercury; from this it follows that their atoms are identical with their molecules—*i.e.*, they have monatomic molecules.

Effervescent Cod Liver Oil and Phosphorated Oil.

Oils, either simple, or containing various medicaments, may be rendered effervescent by means of carbonic acid. Prepared in this way they are preserved better, and are more easily absorbed by the patient. M. Aufrecht has discovered that in cod liver oil and almond oil, for example, dissolved phosphorus undergoes oxidation relatively rapidly, and thus completely loses its activity. On the contrary, oils charged with carbonic acid preserve their phosphorus for a much longer time without decomposition.—*Journ. Suisse de Chim. et Pharm.*, **40**, 7.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

CONSTITUTION OF ORGANIC NITRATES. C. R. Marshall and J. H. Wigner criticise the theory recently advanced by Vignon and Gerin regarding the constitution of mannitol hexanitrate and allied substances, according to which those higher nitrates reduce Fehling's solution strongly, whereas the lower nitrated compounds such as glycerol trinitrate have no reducing action whatever. In order to explain this they state that the terminal $-CH_2·OH$ group of the higher polyhydric alcohols is converted, during nitration, into a hydrated aldehyde group, $-CH(OH)_2$, which under the influence of the nitrous acid formed during the reaction, is further changed to a $-CH(OH)ONO$ group. This, by the action of the alkali of the Fehling's solution, is converted to an aldehyde group which acts as the reducing agent. Against this view it is now urged that the amount of nitrite formed during hydrolysis would vary considerably in the different members of the series, which is shown not to be the case. It is further proved that these compounds possess only a slight reducing action which can be explained on other grounds. The authors see no reason for departing from the view that these substances are nitric acid esters of the various alcohols.—*Proc. Chem. Soc.*, **18**, 33.

EXTRACT OF ALOES. In the Dutch Pharmacopœia Cape aloes has hitherto been official, but J. C. Leusden recommends the use of the extract made from Curaçao aloes rather than from Cape aloes, since he obtains a yield of 70 per cent. of extract from that kind, and only 57 per cent. from Cape aloes. It should be noted, however, that 70 per cent. is rather a low average for Curaçao aloes of good quality, see *P.J.* [3], **23**, 234. Leusden's method of making the extract is to dissolve the aloes by warming it in ten parts of water, then adding ten parts more water, allow it to cool and stand for twenty-four hours, then filter and evaporate to a dry extract. By his process a clear solution is obtained and the 5 per cent. of resinous matter which is retained in the extract made by exactly following the Dutch Pharmacopœia process is avoided.—*Pharm. Weekblad.*, **39**, 62.

SOLUBILITIES OF CALCIUM SALTS. J. S. Lumsden has determined the solubilities of the calcium salts of the acids of the acetic acid series, in order to obtain further information concerning the lessening solubility of calcium salts with increase of temperature. Calcium formate is anhydrous when in contact with its saturated solution and gives a simple ascending curve of solubility, while the calcium salts of the other acids of the series contain water of crystallisation and all diminish in solubility with rise of temperature until a minimum point is reached, after which the solubility increases. Of the salts of the normal acids only calcium acetate changes from one crystalline state to another between 0° and 100°, whilst both calcium isobutyrate and calcium isovalerate have double curves. With the exception of calcium formate all the salts which have been examined, when in contact with their saturated solutions at 100°, consist of crystals which contain 1 molecule of water. The salts of the normal acids increase in solubility from formate to acetate and propionate, then decrease quickly with the growth in the number of carbon atoms, the salts of the iso-acids being more soluble than those of the corresponding normal acids.—*Proc. Chem. Soc.*, **18**,

TETRAZOLINE. S. Ruhemann and H. E. Stapleton state that the action of methyl iodide on tetrazoline is complicated. One substance formed crystallises in dark blue needles having the formula $C_3H_9N_4I_3$, and is readily decomposed by water with separation of iodine, whilst another forms colourless, well-developed crystals, and is an iodide of the formula $C_3H_7N_4I$, which may be transformed into the corresponding chloride and into the platinichloride $(C_3H_7N_4)_2H_2PtCl_6$.—*Proc. Chem. Soc.*, **18**, 30.

LIQUORICE. Dr. W. van Rijn gives the results of an examination of several brands of pipe liquorice used in Holland. These, although free from copper and starch, appear to vary considerably in the amount of glycyrrhizin and of matter insoluble in cold water, as shown in the following table:—

Brand.	Weight.	Moisture.	Ash.	Glycyrrhizin.	Insoluble in Cold Water.
Cassano	55 gr.	15·7	4·0	6·0	31·0
Muzi	31 gr.	16·0	6·2	8·5	24·5
Duca di Atri	47 gr.	15·3	6·0	10·5	28·0
Longo	58 gr.	15·15	5·5	11·0	(?)
Santi Franco	36 gr.	17·0	5·7	13·0	21·0
Salvago	38 gr.	20·8	6·3	13·5	31·0
P. S. Italy ..	30 gr.	17·7	5·6	14·5	21·3
Baracco	57 gr.	15·5	4·6	15·0	29·7

—*Pharm. Weekblad.*, **39**, 64.

BORIC ACID. It is known that the presence of glycerin or mannite is necessary for the accurate determination of boric acid by titration with standard alkali. K. Farnsteiner (*Zeits. für Untersuch. der Nahrungs-und Genuss mittel*, I., 1902, 1), finds that within a certain degree of concentration methyl alcohol serves the same purpose, but not ethyl alcohol. Any variation in the normal results obtained when boric acid is titrated with methyl alcoholic alkali in the presence of methyl alcohol is ascribed to the presence of a little water, which, moreover, is always produced in titrating boric acid with an alkali thus—$H_3BO_3 + NaHO = NaBO_2 + 2H_2O$. Methyl alcoholic baryta solution yields better results owing to the separation of an insoluble barium salt which contains combined water and thus removes a portion of the water formed in the reaction. If the statement is correct that a volatile ester is produced when boric acid is distilled with methyl alcohol it is remarkable that the ester so easily formed is immediately decomposed on neutralisation with alkali. Borax in methyl alcohol also behaves as in the presence of glycerin in showing that borax is an acid salt containing two molecules of free acid and two molecules of combined boric acid. The observations of several authors that more than half of the boric acid is easily volatile when borax is distilled with methyl alcohol is probably due to the further decomposition of the salt $NaBO_2$ by the water of crystallisation in the borax. When methyl alcoholic sulphuric acid is added to borax dissolved in methyl alcohol until a red colour is obtained with methyl orange, the whole of the boric acid can be obtained in the distillate, and this process is available in the presence of much chloride, thus avoiding the presence of hydrochloric acid in the distillate. Ethyl alcohol has the same effect as water in preventing the combination of boric acid with alkali. The different behaviour of the two alcohols shows that it is a specific action of the menstruum which has the function of producing a monobasic acid from H_3BO_3, and in the case of methyl alcohol it is probably due to the more prominent position of the hydroxyl group in the molecule; that is, on the supposition that glycerin and mannite exert their action by the hydroxyl groups.

SOLANUM CHENOPODINUM, F. MUELLER.

BY E. M. HOLMES, F.L.S.

In August, 1898, a specimen of a plant was sent to the Museum of this Society by Dr. E. B. Crmerod, from Boulia, Queensland, who stated that it is much used in the Gulf of Carpentaria district for dysentery, for which purpose the leaves, berries, and stalks are made into an infusion and drunk, with almost immediate benefit to the patient, according to the statements made to him. He adds, however, "I have had no experience of it myself, and cannot say whether it is true. Dysentery may be only enteritis from bad living, etc., but the Gulf is noted for its fevers and agues. The situation of this place (the capital of the 'Never Never' country, as it is called), is L. 22° 55″ E. long., and 139° 55″ S. latitude. The plant is rather rare so far south."

The material sent by Dr. Ormerod included excellent specimens of leaf, flower and fruit, so that I was able to identify the plant at the Kew Herbarium as *Solanum chenopodinum*, F. Mueller. He also sent sufficient of the herb for a preliminary chemical examination, which was kindly undertaken at my request by Mr. C. E. Sage. According to his analysis given below, it would appear that solanine is the active principle of the plant. It is difficult to understand how the plant could be useful in dysentery, except on the ground that solanine acts as a sedative of the nerve terminations of the pneumogastric nerve, and has a beneficial influence on the secretions of the mucous membrane as in bronchitis, gastralgia, asthma, and cystitis (Dupuy, 'Alcaloides,' Vol. II., p. 509). If this note serves to direct attention to an alkaloid which has perhaps been undeservedly neglected in therapeutics of recent years, it will have served a useful purpose.

THE CHEMISTRY OF SOLANUM CHENOPODINUM.

BY C. EDWARD SAGE, PH.C.

With the object of ascertaining the value of *Solanum chenopodinum* for medicinal purposes, I have examined a small quantity of the dried drug, received from Mr. E. M. Holmes, consisting of the dried leaves and stalks together with a few fruits.

The leaves and fruits were separated and powdered, and the stalks were chopped and then ground to a fine powder.

The examination of the leaves and fruits yielded the following results :—

	Per Cent.
Petroleum ether extract dried at 100 C.	2·39
Alcoholic extract	14·00
Ash	12·37
Total alkaloid	0·15

and a similar examination of the stalks yielded :—

	Per Cent.
Alcoholic extract	3·75
Ash	3·4
Total alkaloid	0·07

The alcoholic extracts from both parts of the plant exerted a reducing action upon Fehling's solution, but nothing of a distinctive character was found except the alkaloid. The amount of alkaloid from eight ounces of the drug did not allow much scope for determining its characters, but it was very carefully separated and purified by repeated shaking with chloroform extraction with very dilute acid, and reprecipitation with very dilute ammonia, and separation by shaking with chloroform. The resulting alkaloid was a varnish-like solid, the first tests with which were made with the object of identifying it with atropine.

A solution made with very dilute acetic acid produced no dilation of the pupil when tried on two separate occasions, and when the alkaloid was submitted to the colour tests for atropine no characteristic reaction was obtained.

By reaction with other reagents indications were obtained that it was solanine, and the following colour reactions given by Cazeneuve and Bréteau (*Comptes rendus*, cxxviii., 887-889) were obtained from the purified alkaloid which was separated.

Reaction with—	Cazeneuve and Breteau. *(Pure Solanine.)*	Alkaloid from *S. chenopodinum*
H_2SO_4	Violet	Bluish crimson
HNO_3	Pink	Slight red tint
HCl	Pure Solanine. Colourless Preparations of S. Yellow.	Yellow

In further confirmation of the identity of the alkaloid with solanine a portion was hydrolysed with hydrochloric acid, after which it reduced Fehling's solution and, as solanine yields glucose on hydrolysis, it seems that these tests afford sufficient evidence that the alkaloid in *S. chenopodinum* is solanine.

PHARMACOPŒIA REVISION NOTES.

BY W. LYON.

Unguentum Resinæ.

The official directions for making this ointment are not quite so explicit as they ought to be, nor is the procedure above criticism. If the B.P. is literally followed, and "the lard and oil added to the previously melted resin and beeswax," a portion of the resin and beeswax solidifies on the colder surface of the lard, necessitating remelting. The directions therefore ought to read thus: "Heat the lard and olive oil together and add them to the resin and beeswax previously melted on a water-bath, strain through flannel, and stir until cold." There is no good reason, however, for melting them separately as is directed in the Pharmacopœia. If the whole of the ingredients are heated together on a water-bath it will be found that solution can be secured as expeditiously as by following the official method. This has been proved by comparative experiments. The procedure recommended for retail quantities is as follows:—Reduce the resin to fine powder in a mortar, add the olive oil, and triturate until the resin is thoroughly distributed, taking care that none remains adhering to the sides, this precaution being essential to rapid solution. Now put in the lard, mix thoroughly, and finally add the wax (in fine shreds). Triturate again, and then place mortar in a suitable water-bath. Constant stirring accelerates solution, but is not absolutely necessary. The ointment should be continuously stirred whilst cooling.

Syrupus Aurantii Floris.

Amongst the officinal syrups there are two instances where the sugar is dissolved in the menstruum without the aid of heat, and in the next Pharmacopœia it would be advisable to add to these syrup of orange flower. The directions for making this syrup are to "add 600 grammes of refined sugar to 200 C.c. of boiling distilled water; heat until dissolved; add the undiluted orange flower water." The compilers do not specifically say that the orange flower water is to be added to the hot solution of sugar, but that is the usual reading of the directions. By doing so, however, there is bound to be a certain loss of aroma unless the syrup is made in a stoppered bottle or in a very closely covered vessel. On the other hand, if the solution of sugar is allowed to cool before the orange flower water is added, the sugar begins to crystallise out, necessitating re-solution. A much preferable method is to put the sugar, orange flower water, and distilled water (*cold*) into a bottle fitted with a stopper or a tight cork, place the bottle in a moderately warm place, and shake occasionally until the sugar is dissolved. By thus modifying the official directions the syrup is easily prepared, and there cannot be any loss of aroma.

Unguentum Acidi Carbolici.

Complaints about this ointment have been numerous, but of those who have raised their voices against it most have been "critics rather than constructors," and thus the question remains unsettled. Though of satisfactory appearance when freshly prepared, it gradually assumes a semi-granular appearance caused by the separation of the glycerin. It only requires to be rubbed up in a mortar to make it right again, but it would be an improvement were this re-working rendered unnecessary. There cannot be any doubt that the disturbing agent is the glycerin, and the remedy is either to find a liquid that is an equally good solvent of phenol and more miscible with paraffin ointment, or to retain the glycerin as the solvent and find a new basis. Liquid paraffin naturally claims first attention, but its solvent power is too weak, otherwise it possesses the necessary qualifications. Amongst the fixed oils there are several possible solvents, of which almond oil is *facile princeps*, not only on account of its stability, but also because of its suitability for incorporation in an ointment basis. It is a ready solvent of phenol, and an ointment in which it replaces the glycerin is certainly of more pleasing appearance, even after it has been kept for a few months, than that at present official. A softer, but in some other respects a superior, ointment is obtained by using almond oil as a solvent and petroleum ointment (white) L.H. as a basis. If considered too soft, a slight alteration in the proportions of white wax and white soft paraffin would remove any objections on that score. Incidentally, it may be mentioned here that hard and soft paraffin is less satisfactory as an ointment basis when the medicament is in liquid form than when in powder. A modification of the discarded simple ointment also gives a very satisfactory basis for phenol, the only objection being that it is not so white as one could wish. That, however, may be overlooked provided it fulfils the other conditions. Equal parts (by weight) of almond oil, white wax, and benzoated lard give an ointment which is of medium consistence, and gives no indication of change after being kept for several months. The *modus operandi* is as follows:—Melt the lard, wax, and half of the almond oil together on a water-bath. In a stoppered or corked bottle place the phenol and the remainder of the oil. Dissolve by immersion in hot water. Remove the melted basis from the water-bath, stir constantly until it begins to thicken, then add the phenol and oil (warm). Continue stirring until the ointment is cold. Set aside for twenty-four hours and again rub it up thoroughly.

Unguentum Zinci Oleatis.

Samples of this ointment obtained from different makers are darker in colour than is desirable. This condition seems to be attributable to the method of drying the oleate previous to its incorporation with the soft paraffin. Drying on a water-bath has never given a satisfactory result in my hands. The oleate gradually loses its nascent snowy whiteness, and the longer it is left on the water-bath the more difficult it is to melt with the paraffin. To obviate this difficulty, removal of the water by pressure was tried. The oleate when removed from its calico covering was white, apparently quite dry, and the resulting ointment of much better appearance. This modification of the official process would be a decided improvement. Lard being whiter than soft paraffin, it was thought the use of it as a dilutent would give an ointment free from any yellowish tint, but on trial it was found that lard had little, if anything, in its favour, except that, chemically, it is more closely allied to oleate of zinc than soft paraffin.

BRITISH PHARMACEUTICAL CONFERENCE.

A meeting of the Executive Committee was held at the Pharmaceutical Society's House, on Thursday, February 20, 1902. Present: Mr. G. Claridge Druce (President), in the chair; Dr. Attfield, Messrs. G. D. Beggs, E. M. Holmes, and W. A. H. Naylor, Vice-Presidents; Mr. J. C. Umney, Hon. Treasurer; Messrs. Atkinson and White, Messrs. F. Ransom and E. S. Peck, Hon. General Secretaries, and Mr. Hearn, Assistant Secretary.

The minutes of the previous meeting were read and confirmed.

The report of the Sub-Committee appointed to revise the free list of the 'Year-Book,' and the journals taken for the Editor, was received.

Apologies for non-attendance were received from Messrs. Atkins, Collier, Cummings, Martin, Nasmyth, Newsholme, Tyrer, and Wells.

A letter was read from Mr. Cummings respecting the date of the Dundee meeting, and it was agreed that it should be held on August 11 and following days.

The Late Mr. William Martindale.

Dr. **Attfield** proposed, and Mr. G. D. **Beggs** seconded, that—

The Executive Committee of the British Pharmaceutical Conference offer their sincere sympathy with Mrs. Martindale and family on the occasion of the lamented death of Mr. William Martindale. He was President of the Conference at Cardiff in 1891, and at Liverpool in 1896, a frequent attendant at other annual meetings, and Chairman of the Reception Committee when the Conference met in London in 1900. The Year-Books of the Conference contain many original researches in pharmacy by him. He was Chairman of its Formulary Committee from the commencement until quite recently. In every one of these positions he showed his unrivalled experience and knowledge of every department of pharmacy. The Committee feel that pharmacy has lost in him a brilliant and particularly accurate and conscientious scholar, and a loyal and active worker. Words fail the Committee in any attempt to convey to the widow and family their sense of William Martindale's all-round worthiness, and to express adequately their deep sympathy.

Mr. G. D. **Beggs**, in seconding the resolution, stated that pharmacists in Ireland deeply deplore the death of Mr. Martindale, whose name was looked upon as a household word, and they feel that pharmacy as a body has sustained an irreparable loss.

Mr. W. A. H. **Naylor** expressed the deep sense he felt of the loss the Conference experienced in the death of Mr. Martindale. He felt that anyone who had had the privilege of working with him as he had during the last fifteen years could not fail to be impressed with the extraordinary capacity for work that characterised him. To be associated with him could not fail to act as a stimulus to younger men.

Mr. E. M. **Holmes** desired to express his feeling of the loss the Pharmaceutical Society's Museum had sustained in the death of Mr. Martindale. During the twenty-five years he had had the pleasure of his acquaintance, Mr. Martindale had taken a sympathetic interest in the scientific work of the Museum, and had, whenever opportunity offered, contributed to its collections. In many subjects in which they had worked, as on jaborandi, his work was remarkable for the exceedingly painstaking endeavours to attain absolute accuracy. He would also like to express his gratitude to the late Mr. Martindale for the very genial and effective manner in which he acted as Chairman of the Reception Committee at the meeting of the Conference in London in 1900.

Mr. J. C. **Umney** wished to take the opportunity of recording his deep personal affection towards him, dating from his apprenticeship to him.

The **President** also spoke very feelingly as to the esteem he always had towards the late Mr. Martindale.

The Secretaries were instructed to convey this vote of condolence to Mrs. Martindale.

It was announced that letters had been received from Mr. S. R. Atkins and Mr. N. H. Martin regretting their inability to be present to share in the sad duty of passing this vote.

The Research List.

The following gentlemen were appointed as a Sub-Committee to revise the Research List:—The President, the Hon. Treasurer, Mr. E. M. Holmes, Professor Greenish, and the Hon. General Secretaries. On the suggestion of Mr. **Naylor** it was decided that a foot-note be added to the Research List, drawing attention to the fact that a considerable sum of money was available for the purposes of research, and that applications from suitable workers were cordially invited.

Correspondence.

The Hon. General Secretaries stated that they had received letters acknowledging with thanks their election as hon. members from Mr. C. R. Blackett, Melbourne; Professor Ladenburg, Breslau; Mr. J. H. Maiden, Sydney; Dr. David Prain, Calcutta; Professor Prescott, Ann Arbor, U.S.A.

A letter was read from Mr. Alfred Siebold, acknowledging the vote of condolence on the death of Mr. Louis Siebold, passed at the last meeting of the Committee.

It was announced that letters had been received from various bodies acknowledging the receipt of the Year-Book, and that a copy of the Calendar of the Pharmaceutical Society of Ireland had been received from the Registrar, which had been duly acknowledged with thanks.

A letter was read from Mr. E. F. Young, President of the Bristol Pharmaceutical Association, stating that at a large and enthusiastic meeting of the Bristol pharmacists it was unanimously carried that he be authorised to convey a very hearty invitation to the Conference to visit "our ancient city in the year 1903." It was unanimously resolved that the Executive Committee should cordially recommend the annual meeting to accept the kind invitation of Bristol, and the Secretaries were instructed to acknowledge receipt of the letter in similar terms.

Fifteen gentlemen, having been duly nominated, were elected as members.

CHEMICAL SOCIETY.

At a meeting held at Burlington House, Piccadilly, on Wednesday, February 19, Professor **Emerson Reynolds** took the chair, and there was a good attendance. After the minutes had been read and confirmed, and other preliminary business disposed of, the Chairman called on

Mr. **Baker** for his paper on

The Union of Hydrogen and Oxygen.

The author began by referring to the work of Dixon and Victor Meyer on the influence exerted by traces of water on the union of the two gases. It had been stated by the latter in 1894 that the presence of water exerted no influence on the combination of hydrogen and oxygen. The difficulty of obtaining the two gases in an absolutely pure state was next referred to. After many experiments it was found that the most satisfactory method was to obtain the gases by the electrolysis of barium hydroxide which had been repeatedly crystallised from water. Another important point was the kind of glass used in the experiments. It was necessary to carry them out in hard glass tubes of either Jena or Bohemian glass, soft glass being quite inadmissible. Experiments on the combination of the mixed gases were then carried out in sealed tubes. At first considerable difficulty was experienced in sealing off the end of the tube, as the application of heat had to be avoided; but this obstacle was eventually overcome by inserting a piece of easily fusible alloy and then drawing out the tube to a capillary bore. The gases could then be introduced, and with a little care the metal was fused and ran down into the fine bore of the tube, thereby effectually sealing it. Phosphorus pentoxide was used in all the experiments as the drying agent. Even with wet gases the author found that combination did not take place at a temperature of 610° C. It was explained that by the term wet gases was meant those which had only been exposed to the drying action of phosphorus pentoxide for about two days. With absolutely dry gases it was found that a temperature of melting silver did not effect the union of the gases, providing that no other disturbing influence was present, such as traces of phosphorus pentoxide, which, being an excessively light substance, was liable to be carried into the body of the tube and thus interfere with the experiment. On the other hand, platinum is able to bring about the union of the gases at a temperature considerably below that of melting silver. Other experiments went to prove that water may be present without bringing about explosive combination; there was union, however, to a certain extent. It was further stated that the moist gases combined slowly in sunlight, but that absolutely dry gases did not combine even after several months' exposure. A most interesting paper was brought to a conclusion by a successful demonstration showing that silver could be melted in a mixture of the two gases without bringing about explosion, and by comparing the effect of heat on two tubes of the gases, the one being perfectly dry and the other moist. In answer to a query as to the influence of P_2O_5 in bringing about combination, the author considered it might be due to the formation of phosphoric acid, which would form an electrolyte.

Professor **Adrian Brown** then communicated some interesting observations on

Enzyme Action.

Experiments with invertase, which had been considered to proceed according to mass action, were compared with experiments on the inversion of cane sugar by means of dilute sulphuric acid. Different results were obtained. Inversion change by means of the enzyme did not proceed as mass action. A series of inversion experiments on cane sugar had been carried out with a view to ascertaining the retarding influence, if any, of the products of inversion. Definite quantities of invert sugar were introduced in certain cases, and it was found that a marked retarding influence was exerted, in some cases to as much as 45 per cent. These experiments were repeated, using lactose in the place of invert sugar, in order to ascertain the influence of viscosity on the rate of inversion. It was found that in large quantities lactose did slightly retard the rate. Professor Brown concluded by saying that there was reason to believe that invertase combines with the sugar first, which exists for a short time before ultimate disruption.

Dr. **Horace Brown** next read a paper on the

Action of Diastase on Starch.

The action of the enzyme had been studied and also compared with the action of dilute sulphuric acid on cane sugar. The apparent difference between enzyme and acid hydrolysis had been difficult to explain. The enzyme was a non-electrolyte. The author put forward the theory that the enzyme and sugar formed a compound which was less able to withstand the action of the water ions. He referred to the work of Kjeldahl, who had shown that for constant starch solutions the amount of conversion was proportional to the amount of diastase added, provided that measurement were taken at early stages. The figures obtained in the various experiments were discussed and compared. It was shown that although the curve of mass action was not formed when the figures for the enzyme action were plotted out according to time, a curve was obtained which very closely approximated to this.—The **President** asked whether there was any experimental evidence as to the existence of the enzyme sugar compound.—In reply Dr. **Brown** said there was no evidence, but it seemed highly probable that such a compound was formed.

Mr. O. Silberrad communicated the last paper read. It dealt with the

Polymerisation of Diazo-Acetic Ester,

and was chiefly remarkable for the number of formulæ which were mercilessly scattered over the surface of the blackboard before the more or less impatient remnant of the audience.

FACTS AND FANCIES.

BY AN ORDINARY PHARMACIST.

Reasons for the Scarcity of Apprentices.

It is not too much to say that the most serious difficulties with which British pharmacists are faced to-day are connected, more or less directly, with deficiency in opportunities of acquiring knowledge of the business. As a natural consequence of that there appears to be a fairly general difficulty experienced in inducing youths of a suitable class to enter upon the occupation of pharmacy as apprentices. In addition, there is good reason to believe that the requirements of qualification are now sufficiently severe to deter a large number of undesirables from joining our ranks. That, I take it, is an advantage rather than otherwise, since it is distinctly advantageous to effect a diminution in the number of the uncultured who would adopt pharmacy as a profession because it is supposed to be a comparatively easy business in which to make a living, the capital required being small and the profits comparatively great. On the other hand, many youths of a better class are, undoubtedly, deterred from adopting our profession owing to the fact that the prospects offered by pharmacy to the average individual are eclipsed for the time being by those offered by other professions, the training for which is no more severe, while the responsibilities are less onerous and the returns greater. But however numerous and varied the causes of the dearth of apprentices may be, it is essential that the standard of qualification should not be lowered, if pharmacy is to continue on the upward path. Personally, I am of opinion that we have not yet attained the limits of stringency which present circumstances justify, and, as a first step in the direction of further improvement, I would like to see pharmacists unite in refusing to take apprentices or employ junior assistants who have not passed a preliminary examination recognised by the Pharmaceutical Society.

The Problem and its Solution.

So long as a suitable preliminary examination in English, Latin, French or German, and mathematics must be passed by all candidates for the Pharmaceutical Society's qualifying examination, it is nothing short of cruelty to allow anyone to engage in the practical work of a pharmacy until the necessity for continuing elementary school work no longer exists. Scientific and technical studies should begin to engage an apprentice's attention from the first day of his engagement, and both employer and employed must suffer if that should not be possible, as in cases where a preliminary examination has not yet been passed. But, it may be objected, if a scholastic test be imposed as suggested, a further difficulty will be interposed in the way of getting apprentices. Just so, and pharmacists must face the situation in a proper spirit. Apprentices want to learn their business, pharmacy needs better trained followers, and the public requires properly educated dispensers of medicine. Opportunities to learn the business can best be provided by persons actually practising as pharmacists, and they can best solve the apprenticeship problem by taking steps to abolish many of the objectionable features which tend to deter youths of a desirable class from embracing pharmacy as a profession.

Apprentices versus Articled Pupils.

Apprenticeship, properly so-called, is altogether a thing of the past. But would-be practitioners in every profession must make a beginning of some kind, and pharmacists might do well to consider the question of taking articled pupils. Instead of taking youths of fourteen or fifteen as apprentices and setting them to work as errand boys, porters, packers, or cheap assistants, let properly educated youths of sixteen or seventeen be taken as articled pupils for three years, teach them the practical part of the business as far as circumstances will permit, and allow them a reasonable amount of time for attendance at lectures and demonstrations, study, etc. Having proved, by passing a recognised preliminary examination, that he possesses a competent knowledge of English, Latin, a modern foreign language, and mathematics, the pupil should be encouraged to begin the practical study of the British Pharmacopœia, while gradually taking courses of instruction in elementary mechanics, physics, chemistry, and botany. Pharmacopedy (materia medica), galenic pharmacy, prescription reading, and dispensing are essentially shop subjects, based chiefly upon a study of the Pharmacopœia, but the more purely scientific subjects should be studied at a university college, technical school, or similar institution. Facilities of the kind required are provided nowadays in most towns of any importance, and in smaller places provision should be made to enable pupils to attend day classes in the nearest large town. Evening classes serve a very useful purpose, no doubt, but pharmaceutical students who put in a full day's work ought to have the evening free for recreation and rest.

Division of the Qualifying Examination.

As the direct outcome of such a system of pupilage as I have briefly outlined, division of the qualifying examination in pharmacy would be brought within the sphere of practical politics. Thus, at the end of the period of pupilage, as vouched by the pharmacist with whom the three years had been spent, the candidate might be admitted to an intermediate examination in mechanics, physics, chemistry, and botany, conducted by or under the auspices of the Pharmaceutical Society. A still better plan, perhaps, would be to authorise the Society's Boards of Examiners to accept certificates in those subjects from recognised examining bodies. I am not aware that examinations of the kind and standard required are conducted anywhere at present, but suitable arrangements would soon be made if the demand arose. There is no particular reason why the Pharmaceutical Society should examine candidates as to their knowledge of pure science, and the greatest possible relief would be afforded both to candidates and examiners by making the qualifying examination a purely technical one. Moreover, it would be rendered possible to examine candidates properly as to their knowledge of the technical subjects, which is not now the case. The candidate having presented certificates to prove that he had satisfied competent examiners with regard to his knowledge of mechanics, physics, chemistry, and botany, the applications of those sciences should be dealt with by the Pharmaceutical Society's examiners in connection with the technical subjects—pharmacopedy, galenic pharmacy, and dispensing. All the botany a pharmacist need know should be capable of expression in connection with his knowledge of crude drugs of vegetable origin. His knowledge of theoretical chemistry could be proved and applied in dealing with the chemical materia medica, while the application of official tests and the actual performance of volumetric and gravimetric analyses, assay processes, etc., would afford ample proof of his skill as a practical chemist. Finally, all his knowledge of the foregoing subjects, as well as of mechanics and physics, could be summed up and tested in the subjects of galenic pharmacy and the compounding of medicines.

A Degree in Pharmacy.

So far as the Major Examination is concerned, it is quite time the present arrangements were superseded. Instead of re-examining a legally qualified person in most of the subjects in which he has already proved his proficiency, the examiners for the honours course should test the knowledge of the candidate as a specialist—that is to say, the candidate at the Major Examination should be entitled to choose whether he shall be examined (*a*) in physics and chemistry, or (*b*) in botany and pharmacopedy. Such a differentiation would, of course, make the Major Examination partake more of the nature of that for a university degree, and, if the necessary arrangements could be made with any of the universities, it might be desirable to abolish the Major Examination in favour of a degree examination in physical or natural science. It would never do to allow any university to grant degrees in pharmacy to individuals who had not passed the qualifying examination of the Pharmaceutical Society, but—granted a satisfactory elementary education and suitable instruction in the scientific subjects—there appears to be no valid reason why the honours examination in pharmacy should not be conducted by university examiners and followed, in the case of a successful candidate, by the granting of a university degree. And though we may at present seem far from realising that particular ideal, it is useless to ignore the fact that the current tendency is in the direction indicated.

LEGAL INTELLIGENCE.

Pharmacy Act, 1868.

Scotch Appeal Case.

In the High Court of Justiciary, Edinburgh, on February 20, 1902, before the Lord Justice Clerk (Macdonald) and Lords Pearson and Young, Richard Bremridge, Registrar under the Pharmacy Acts, in the name and by authority of the Council of the Pharmaceutical Society of Great Britain, with the concurrence of James Neil Hart, Procurator-Fiscal of Lanark Lower Ward, appealed against a decision of Sheriff-Substitute Fyfe, in the prosecution of John Steele Smith, Bachelor of Medicine and Bachelor of Surgery, proprietor of the business carried on by him within the shop, No. 482A, Springburn Road, Glasgow, for an offence within the meaning of Section 17 of the Pharmacy Act, 1868.

Statement by the Sheriff.

As stated by Sheriff-Substitute Fyfe, this was a cause under the Summary Jurisdiction (Scotland) Acts, 1864 and 1881, and the Criminal Procedure (Scotland) Act, 1887, and the alleged offence was that on October 2, 1901, the respondent did within his said shop at No. 482A, Springburn Road, Glasgow, sell, contrary to the provisions of Section 17 of the said recited Act, to Mary Jane Ross, Glasgow, a poison within the meaning of part one of Schedule A to the Pharmacy Act, 1868, to wit, a quantity of strychnine, which, at the time when sold by him to the said Mary Jane Ross, formed an ingredient in a bottle of Fellows' Compound Syrup of Hypophosphites in respect—(1) that the said Mary Jane Ross was a person unknown to the respondent, and was not introduced by any person known to him; (2) that he, the respondent, before delivery of said article, failed to make or cause to be made an entry in a book to be kept for that purpose, stating, in the form set forth in Schedule F to the Pharmacy Act, 1868, the name and address of the purchaser, the name and quantity of the article sold, and the purpose for which it was stated by the purchaser to be required, and likewise failed to have affixed to such entry the signature of said purchaser and of the person, if any, who introduced her to him; and (3) that the respondent failed to label the said bottle distinctly with his name and address as the seller thereof; whereby the respondent became liable in a penalty of £5 sterling, and, failing payment of the penalty imposed, to imprisonment in terms of Sections 6 and 8 of the Summary Jurisdiction (Scotland) Act, 1881. At the calling of the case the respondent objected that the appellant had no title to prosecute. Sheriff-Substitute Fyfe sustained this objection, and dismissed the complaint. The question of law for the opinion of the Court was as follows:—Has the Registrar, under the Pharmacy Acts, 1852 and 1868, in the name and by authority of the Council of the Pharmaceutical Society of Great Britain a title to prosecute the respondent under Section 17 of the Pharmacy Act, 1868, for a contravention of the provisions thereof?

Arguments.

Mr. Morison opened the case for the appellant, contending that the Registrar of the Pharmaceutical Society had a title to prosecute, as the statutory officer of a statutory body, proceeding in the name and under authority of the Council of the Society, which undoubtedly had an interest in enforcing Section 17.

Lord Young: Not an interest, but a public duty. That is a better way of putting it, I think. The Society are the guardians of the public interest in the matters provided for by the Statute.

Mr. Morison having quoted a number of decisions under other Statutes,

Mr. MacRobert, for the respondent, submitted that the Sheriff was right in dismissing the case, and stated, in the course of his argument, that Section 17 had nothing to do with the Register.

Lord Young: All the sections are in the public interest and for their protection. Section 17 has to do with the public interest and the public safety, for which alone this Statute exists. If the Registrar is the prosecutor for contraventions of this section in England, that would indicate that the Pharmaceutical Society have to do with it in the discharge of their duty to the public.

Mr. MacRobert submitted, however, that the proper person to prosecute under Section 17 was the person mentioned in the Summary Procedure Act of 1864—the Procurator-Fiscal of the Sheriff Court.

Mr. Salvesen, for the appellant, explained at this point that the Lord Advocate had declined to take up such cases as public prosecutor, holding that it was the duty of the Registrar of the Pharmaceutical Society to prosecute. This was an action to have that decided.

Lord Young: Looking to the sense and reason of the thing, there could be no more desirable person than the Registrar as a public prosecutor.

Mr. MacRobert said the Registrar had no right at common law to prosecute, and submitted that the Statutes conferring privileges on any society ought to be interpreted strictly in the interests of the person prosecuted.

The Lord Justice-Clerk: The preamble makes it very clear that the Statute was for the benefit of the public. It is not merely for the benefit of the Society, but the Society is used as the instrument for protecting the public, they being the best party to do it.

Lord Young: As guardians of the public safety.

Mr. MacRobert admitted that someone must look after the interests of the public, but urged that the public prosecutor was the proper person, and again submitted that the Registrar of the Pharmaceutical Society had no title under the Statute.

Judgment.

Lord Young: This appeared when I read it—which I did, of course, cursorily, and before coming here—to be a case in which the learned Sheriff-Substitute had fallen into error—of course, upon a legal question—because he is, of our knowledge and experience of his judgments, a very sensible man who takes good common-sense views of the cases that come before him, in the legitimate interests of all the parties concerned, and I could not imagine for a moment that it occurred to him that in any interest which he had to consider the Procurator-Fiscal, who had been prohibited from prosecuting in this case, would be a safer prosecutor in the public interest, and in the interest of the party accused, than the Registrar of the Pharmaceutical Society. He could not have taken that view. But he was of opinion, upon such consideration as he could give the case in a summary trial, that the argument which was addressed to us, being, I suppose, addressed to him, was technically sustainable, and that the proper legal course was to hold that the Crown Authorities had misdirected the Procurator-Fiscal not to prosecute in this case, because the legitimate prosecutor and the prosecutor plainly intended by the Statute, without reference to any very critical examination of words, was the Registrar of the Pharmaceutical Society. It struck me that that conclusion which he arrived at, not in reason and good sense and the legitimate public interest of the thing, but upon such technical considerations as were pressed before us, was erroneous. Having heard the argument upon both sides here distinctly enough stated, I am very clearly of opinion that my impression was right. In short, my impression made upon reading the case has been hardened, as Lord Cockburn used to express it, into an opinion and judgment, my judgment being that the Registrar of the Pharmaceutical Society is the prosecutor in such cases, intended for the Legislature and recognised, as we are told, as such, so far as the information on the other side goes, by the Courts in England. Mr. Salvesen said that he had inquired and got an answer that there was recently a prosecution—not objected to—by the Registrar for exactly the same offence committed in Portsmouth. That is, if one who was not a qualified chemist had sold at all he would have been subject to a penalty; but on a sale by a qualified chemist, without observing the provisions of Clause 17 of the Act, he was liable to be prosecuted and subjected to the penalty under that clause, and that the proper prosecutor, although he is not named as the prosecutor at all under Section 17—the prosecutor, according to the true meaning and reading of the Act, and only legitimate reading of the Act, was the Registrar of the Pharmaceutical Society; and that no better prosecutor, in the interests of the party accused and the public, to have such contravention repressed, could be taken. There was no objection there. I sent for some books, but have not had time—for they only came in within the last few minutes—to look into it; but I have no doubt we would find, on inquiry in England, that the practice soon after the Act came into operation, was in accordance with what was done at Portsmouth the other day without any objection. In short, what was done the other day without any objection—for that is the better way of putting it—was in accordance with the English view of the Procurator-Fiscal in such a case, I think the Registrar of the Pharmaceutical Society, then, is the proper prosecutor in such cases, and that the judgment of the Sheriff to the contrary ought to the reversed, answering the question in the stated case accordingly, and remitting to the Sheriff to proceed on that view.

Lord Pearson, concurring, held that under Section 17 there was no suggestion that the Procurator-Fiscal was to be the only prosecutor.

The Lord Justice-Clerk also agreed that the question was to be answered in the affirmative.

No expenses were asked by the appellants.

Counsel for appellants, Mr. Salvesen, K.C., and Mr. T. B. Morison; agents, P. Morison and Son, S.S.C.; counsel for respondent, Mr. MacRobert; agent, J. Stuart Macdonald, S.S.C.

Sale of Food and Drugs Acts.

Camphorated Oil.

At Worship Street Police Court, on Thursday, February 20, Thomas Brown, drug dealer, 80, Bath Street, City Road, E.C., was summoned for selling camphorated oil which was subsequently certified by the public analyst to be 55·5 per cent. deficient in camphor.—Mr. Beck, who appeared for defendant, stated that the article was sold as received from the manufacturers, who invoiced it as "B.P.," but they now stated that, owing to the oil having been heated to dissolve the camphor, evaporation had taken place.—Fined £1 and £1 13s. 6s. costs.

Spirit of Nitrous Ether.

At Bishop Auckland Petty Sessions, on Thursday, February 20, Bridget Buck, of Coundon, was summoned for selling spirit of nitrous ether, which was deficient in ethyl nitrite to the extent of 52 per cent.—For the defence it was stated that defendant had been in business about twelve months, having purchased the business with the stock. When the Inspector asked for the nitre, and whether it was B.P. she told him she did not know, but pointed out that the letters B.P. were on the bottle, so she supposed it was all right. She had not previously sold any of the spirit.—Fined 8s. 6d., including costs.

Self-Raising Flour.

At Dudley Police Court, on February 19, Daniel Burchill and Alfred S. Hughes, Southall's Lane, Dudley, were again charged with selling self-raising flour not of the nature and substance demanded (see *ante*, p. 88).

The case had been adjourned for a sample to be sent to Somerset House, in consequence of the certificates of two analysts giving different results. The Somerset House analysis showed the sample to contain in 1 lb. 45 grains of cream of tartar (equivalent to 36 grains of tartaric acid), and 24 grains of sodium bicarbonate. They were therefore of opinion that the sample did not contain tartaric acid or cream of tartar in greater quantity than was necessary for neutralising the sodium bicarbonate, the latter being slightly in excess.

Mr. F. W. Green, who defended, asked that, on that analysis, the case should be dismissed.

Mr. Bean (magistrate) said the analysis from Somerset House was perfectly independent, and it practically endorsed the certificate of the analyst who analysed on behalf of the defendants. The latter had come out of it clearly and fairly, and were entitled to all the benefits they could get out of the analysis. The case was dismissed, but the magistrates refused to grant the application of defendants' solicitor for the analyst's and solicitor's fees.

Liniment of Soap.

In the High Court, before the Lord Chief Justice and Mr. Justice Bolton, on February 21, Mr. McMorran applied, on behalf of Messrs. Boots, Limited, for a mandamus that Mr.

d'Eyncourt should state a case for the High Court in the recent methylated soap liniment case heard before him.

The grounds for the application, as stated by the learned counsel, were (1) that at the time the purchase was made the business did not belong to Boots, Limited, but to Day's Southern Drug Co., Limited; (2) that the magistrate should have heard evidence as to a commercial standard and as to prejudice to the purchaser which he refused to hear, and (3) that he offered to hear evidence as to prejudice after he had given judgment, showing that he had a doubt in his mind as to whether he ought to have excluded this evidence.

The Court granted a rule *nisi*.

SALE OF BEESWAX.

On February 20, at Deal Police Court, George Stewart Dunn, chemist and druggist, 100, High Street, Deal, was summoned for selling as beeswax an article which the public analyst afterwards certified to contain 30 per cent. of paraffin wax.—Mr. Morice, representing the Chemists' Defence Association, appeared for the defendant, and he submitted that he had no case to reply to, as, according to the decision in the case of Fowle *v.* Fowle, beeswax was not a drug.—The Chairman said the case was a purely technical one, and it had not been proved to the magistrate's satisfaction that beeswax was a drug, therefore the case would be dismissed.—The Bench intimated that they would be prepared to state a case if applied for.

LETTERS TO THE EDITOR.

Pharmaceutical Education.

There is just one point in Mr. Newsholme's paper on this subject in last week's Journal to which I wish in the meantime to refer, leaving the others to some future occasion, when I hope to deal with the various criticisms which my paper has evoked. What I wish to deal with now is contained in this sentence: "I do not find that medical education is particularly favoured in regard to Government grants, and we like to call pharmacy the 'handmaid of medicine.'" He is here under an entire misapprehension as to the facts, which I think it is well to call attention to, in view of possible discussions which may arise in the near future. The Scotch universities receive annually a sum of £40,000, which is divided in certain proportions among the four of them. The medical faculty, being the largest, receives the larger portion of the sum allocated to each university, so that in this way medicine enjoys a very large share of this Government grant. I am not sufficiently acquainted with the grants given in England to be able to go into them in detail. That they are considerable the following extract from the paper of Mr. Grier, which also appears in your last issue, will show. He says—

> Finally—and this ought to appeal to you as business men—pharmacy would share with medicine and dentistry in the annual grant of £25,000, which is made to the university colleges, so that by utilising technical schools during apprenticeship and the university colleges later on, in preparing for the Qualifying Examination, pharmacists would share to the fullest extent in the grant, which Government gives in aid of secondary and university education, as well as in any corporation or city grants.

Medicine seems thus to have a large share in Government grants in England as well as in Scotland. Why should not the "handmaid," therefore, also participate either in this grant or in any other given for scientific or technical education?

Aberdeen, February 24, 1902. JAMES PATERSON.

I have been much interested in Mr. James Grier's able address on Pharmaceutical Education, and my attention has been drawn principally to his remarks on the subject of apprenticeship. I have always advocated that the Pharmaceutical Society should control the apprenticeships of the country. Every chemist taking an apprentice should have to register him at Bloomsbury Square, and the Society should see that he has ample time for study and recreation. It is absurd to expect an apprentice with one evening "off" per week, whilst the other days he works in the shop from 8 a.m. to 8 p.m., to study for the Minor. He must have proper time for study and recreation, consisting of not less than three mornings "off" until 10 o'clock for recreation, and three evenings "off" from 5 o'clock for study, per week. These were the hours in force where I was apprenticed, and I took advantage of the time afforded for study, and passed the Minor one month after I was out of my time, nine years ago, and the Major six months later. If the Pharmaceutical Society will not look after the interests of the apprentices during apprenticeship, they should impose the much talked-of curriculum, and divide the Minor.

February 24, 1902. "PHARMACY AND EFFICENCY" (121/45).

I should like to express the gratification which I felt on reading the excellent article in the current issue of the ***P.J.*** by Mr. James Grier on "Pharmaceutical Education." If there are any subscribers to the ***P.J.*** who have not already read it, I should strongly recommend them to read and "inwardly digest" it. The division of the "Minor" is urgently called for, but it is a question whether the need for a compulsory curriculum is not equally or even more urgent. A compulsory curriculum is the next step forward for pharmacy. Mr. Grier's idea that pharmacy should be represented on the General Medical Council along with medicine and dentistry has my hearty concurrence. Regarding the Major, as he says, it has served its day. It is plainly to be seen that it is now moribund, and the sooner it is done away with the better, and the titles of pharmacist and pharmaceutical chemist conferred where they naturally belong—viz., to the qualified man—the "Minor" being, at the same time, stiffened and divided. As to the "question of etiquette" in the Annotations paragraph (page 158), I think that the writer's suggestion that the "M.P.S." should be printed upon the visiting card is the best. It is a plan I have personally adopted from the outset.

February 25, 1902. "GLYCYRRHIZA" (122/30).

The Proposed William Martindale Memorial.

In response to your request for suggestions, I offer the following:—(1) A portrait in oils for the Council Room, and, if possible, a bust for the Examination Hall; (2) A Martindale medal in practical pharmacy, to be awarded under the same conditions as the Pereira medal. I suggest the latter as a fitting memorial of a man who made the subject his life-study, and whose pre-eminence in that department was unquestioned. Whatever form the memorial takes, let us hope that it will be worthy alike of the Pharmaceutical Society and also of the distinguished man who "gave his life so royally" to the service of pharmacy.

Buxton, February 24, 1902. R. WRIGHT.

In response to your invitation per your columns, I offer to you a suggestion for memoralising the illustrious name of William Martindale, of whom, naturally, I am a profound admirer. I propose that a Parian replica of Mr. Martindale's head, crowned with a wreath of bay leaves, shall be cast, and that this shall be mounted on a pyramid base ebonised block, on the front of which a list of Mr. Martindale's offices is described in gold. This would either serve as an excellent centrepiece for a pharmacist's window, if of considerable size, or as an ornament to the anteroom. It could be offered to the M.P.S. at the nett cost of production, and might even serve as an inducement to additional membership. A cheap plaster cast, affording some idea of the other ornament of value, might be sent to all registered chemists, and serve to keep the Society's interests well before them as the units of its strength. This, I feel sure, Mr. Martindale, as our leader, would wish us especially to keep in mind, and the impress of his great life is well symbolised in the black and white of the author of the past (himself), of the sculptor of to-day, and the archæologist of the future. How can we better perpetuate the memory of such fame than by scattering broadcast enduring figure-heads?

Embsay, February 25, 1902. F. Dickins, M.P.S.

The Affixing of Medicine Stamps.

You were good enough to insert in your issue of December 14 last year a brief notice from me that the Inland Revenue Authorities had signified their intention of enforcing that clause of the Stamp Act requiring the stamp to be so affixed that the contents of box, bottle, package, etc., cannot be withdrawn without defacing the stamp. Since that date I have had a prolonged correspondence with the Board, explaining the almost impracticable nature of their requirement. After exhausting all argument, I received what I had to assume was the Board's ultimatum, as follows:—

January 18, 1902.

I have to refer you to the letter addressed to you from this Department on the 6th ultimo on the subject of the requirement of the law with regard to the affixing medicine labels, and to state that the Board can only add that the regulations in this matter must be complied with in future.

My reply will practically explain the situation:—

Sir,—In regard to the very important decision you convey to me as to affixing medicine labels I find myself in a dilemma it is impossible to escape. I fully recognise the difficulty the Board must necessarily have in administering an Act which came into existence when the number of proprietary medicines was very small, and foreign ones unknown. The gigantic proportions the sale of dutiable medicines has in recent years attained could not possibly have been contemplated. The whole conditions are revolutionised both in regard to the articles themselves and the elaborate and varied methods of packing in cartons, etc., etc. Hence although it may be quite possible for me to stamp my own preparations in accordance with the requirements of the law, I nevertheless can have no control over a very large percentage of goods (not my own) which are carelessly and improperly stamped, yet for the sale of which I must logically be responsible. May I suggest as a means of arriving at some *modus vivendi* that an opportunity be granted of submitting for the inspection of the Board examples demonstrating the difficulty. I beg to assure you I am anxious to comply with every legal requirement if it can be shown I can do so.

The Board consenting to my request, I, in company with Mr. Carteighe, as representing the Pharmaceutical Society, had an opportunity of submitting for inspection a varied selection of proprietaries stamped in various manners, and also of demonstrating that in many methods specifically approved by the Board the stamp was more readily detached than in some examples condemned. My colleague, Mr. Carteighe, suggested very forcibly that the prominence of the stamp was, in his opinion, a decided advantage to the Revenue, on the ground that the public generally were disposed to consider it implied some guarantee. After a lengthened interview the question was deferred for further consideration, and on the 18th inst. the following letter was received:—

1902.

Sir,—Adverting to your letter of the 20th ult., and to your recent attendance at this office, I am directed by the Board of Inland Revenue to state that they have given the question of the mode of affixing the duty label to medicines their most careful consideration, with the result that, in view of the facts adduced by you and your colleague, they feel that they are justified in not rigidly enforcing a literal compliance with the provisions of the Act 52 Geo. III., c. 150. It must, of course, be understood that if this concession be found dangerous to the Revenue it will be withdrawn.

I should like to add that the greatest courtesy and consideration were extended to our representations, and it was made clear that the Board exercises great discrimination and moderation in administering an extremely difficult Act. As the Act of George III. is in itself an amending Act, one might consider it a not inappropriate time to get it further amended in one or two particulars which press severely on a vast number of pharmacists who are made unconscious law-breakers.

285, Brockley Road, S.E. Leo Atkinson.
February 25, 1902.

Natural Crossing Among Cruciferous Plants.

It has never seemed credible to me that there is no "spontaneous" cross-fertilisation among the Cruciferæ. Darwin ('The Effects of Self and Cross Fertilisation in the Vegetable Kingdom,' 1876, p. 408) names *Pringlea* as the only plant "in the great order of the Cruciferæ which is anemophilous," a peculiarity which he explains by the fact that in Kerguelen Land, where it is found, there are hardly any winged insects. According to the testimony of many gardeners to whom I have referred the matter, it is exceedingly difficult to raise seed from a bed of a particular variety of cabbage, cauliflower, etc., that will breed true to the variety, should there be beds of other varieties of these plants anywhere in the neighbourhood. The presence of obstructions on the intervening space—*e.g.*, high quickset hedges, walls, shrubberies, etc., does not prevent cross-pollination, so that insect-agency is indicated. The interesting experiments of Mr. Sutton now give scientific sanction to these empirical observations, and add one more to the list of errors due to parsimony of attention and premature inference.

Glasgow, February 22, 1902. J. P. Gilmour.

Dispensing Query.

I am assured that pills from prescription below are made so as to be not larger than the ordinary five-grain pill. Will someone kindly inform me how?

℞ Ferri iodid.	gr. .
Hyd. *c.* cret.	gr. $\frac{3}{4}$.
Ext. nux vomica	gr. $\frac{1}{4}$.
Ext. hyoscy.	gr. i. or *q. s.*

Ft. pil. i. Mitte xii. silvd.

February 24, 1902. "Failed" (121/47).

Test for Chlorides and Sulphates.

In the note on the test for chlorides and sulphates in potassii citras and organic substances (*P.J. ante*, page 142) it should have been stated that in the case of chlorides the use of nitric acid is inadmissible, owing to the fact that nitric acid decomposes chlorides on ignition. With chlorides it is sufficient to ignite simply without using nitric acid.

February 26, 1902. F. A. Upsher Smith.

Mandl's Solution.

Replying to a correspondent's query, *re* above, in this week's *P.J.* ("M. C.," 70/19), the following is the formula as given in Hager's 'Manuale Pharmaceuticum':—

GLYCEROLATUM IODOCARBOLISATUM. (MANDL.)

℞ Acidi carbolici,	
Iodi .....aa	0·5
Kalii iodati	1·0
Glycerinæ	50·0

Misce et solve. S. Ad pharyngis illitum.

London, February 21, 1902. Arthur F. Surfleet.

I have frequently dispensed Mandl's Solution, as follows:—

℞ Iodi	gr. vi.
Potass. iodid.	gr. xviii.
Menthol	ʒi. gr. vi.
Glycerini	ʒivss.
Sp. vini rect. .....ad	℥i.

M. et solve.

Bradford, February 21, 1902. Marmaduke Firth.

With reference to inquiry by "M. C." about Mandl's Solution, the formula is :—

℞ Iodi	gr. vi.
Potass. iodid.	℈i.
Ol. menth. pip.	♏v
Glycerinum ad	℥i.

Ft. Pigmentum.

London, February 21, 1902. "Pharmaceutist" (121/33).

A formula for Mandl's Solution (Pigmentum Mandl) is given in the 'Pharmacopœia of the Hospital for Diseases of the Throat,' and is as follows :—

℞ Iodini	gr. vi.
Potass. iodidi	gr. xx.
Ol. menth. pip.	♏v.
Glycerin ad	℥i.

Misce.

Stamford, February 24, 1902. P. A. Beale.

In reply to "M. C.," the following is the formula for Mandl's Solution :—

℞ Iodinii	gr. vi.
Pot. iod.	gr. xii.
Ol. menth. pip.	♏iv.
Glycerini ad	℥i.

February 25, 1902. "G. B." (122/18).

I see a query from a correspondent in this week's *P. J.* as to what is Mandl's Solution. I have frequently dispensed it for a F.R.C.S., who graduated from London University College Hospital, and it is :—

℞ Iodum pur.	gr. vi.
Potass. iodi.	gr. xx.
Ol. menth. pip.	♏vi.
Glycerin	℥i.

M. ft. Pig.

North Finchley,
February 25, 1902. J. J. Webb.

In answer to "M. C." the formula for "Mandl's Solution is :—

Iodine	gr. xii.
Potassium iodide	gr. xv.
Oil of peppermint	♏ii.
Glycerin ad	℥i.

Dissolve.

Queen's Hospital, Birmingham. H. Campbell.
February 25, 1902.

Mandl's Solution as used at this hospital is the following :—

℞ Iodi.	gr. vi.
Potassii iodid.	gr. xxv.
Ol. menth. pip.	gtt. iii.
Glycerin	℥i.

John Mackinna, Secretary.
Metropolitan Ear, Nose and Throat Hospital,
February 26, 1902.

In reply to your inquiry, *re* Mandl's Solution, the following is one which we dispense often for a medical man :—

℞ Iodine	gr. iii.
Potass. iodid.	gr. x.
Ol. menth. pip.	♏ii.
Glycerin ad	. ℥ss.

M. ft. Pigment.

Mirfield, Yorks, February 26, 1902. Jas. A. Lindley.

Teinture de Fismes.

Can any reader favour me with the formula for a preparation known as "Teinture de Fismes"?

February 26, 1902. "G. T." (70/31).

Fuller's Lotion.

Osler in his 'Principles and Practice of Medicine,' gives the following formula for Fuller's Lotion :—

℞ Sod. carbon.	ʒvi.
Tinct. opii.	℥i.
Glycerin	℥ii.
Aquæ	℥ix.

The preparation as above is in frequent use here in cases of acute arthritis.

St. Bartholomew's Hospital, E.C., J. Langford Moore.
February 27, 1902.

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders.

Notice to Leave (J. O.—70/28).—You are entitled to give a month's notice at any time.

Composition of Mixture (O. W. J.—70/27).—We regret we cannot help you in this matter.

Label on Hair Lotion (A. D.—70/22).—A poison label does not seem necessary, but it might be well to label the preparation "For Outward Application Only."

Oatmeal for Toilet Articles (J. M. C.—70/26).—Pure fine oatmeal is what should be used. Sometimes a little bran or powdered orris root is added.

Gloss on Dog's Coat (W. H.—70/25).—We have no information on the subject, but possibly a solution of castor oil in alcohol might effect the desired purpose.

Glycerin (J. H.—70/23).—It is not likely to suffer any decomposition in the circumstances mentioned. If subjected to excessive heat the elements of water will be eliminated, and irritating vapours of acrolein or acrylic aldehyde given off.

Dark-Room Charges (A. D.—70/22).—The use of the dark-room should be free to customers for changing plates, but persons who make no purchase might be charged threepence or some similarly small fee. For developing, a charge of sixpence to one shilling per hour should be made, with chemicals extra.

Ionone (J. M. C.—70/26).—Ionone is readily soluble in all proportions of 90 per cent. alcohol ; the commercial article is generally a 10 or 20 per cent. solution of the pure substance. It blends best with violet, cassia, orris, and tuberose. Such bouquets are much improved by the addition of a faint trace of sweet or bitter orange oil.

Use of Bottles (C. J.—70/21).—So long as the bottles remain the property of the persons whose names appear thereon, they can prevent such misuse of them as they protest against. If, however, you have no recollection of doing what they say, you should notify them of the fact, and might then also protest against the tone of their letter.

Vanillin (J. M. C.—70/26).—You must adjust the amount of the vanillin to your requirements. The best way is to make a fairly strong alcoholic solution. For delicacy of odour, preference is generally to be given to the natural vanilla extract, since the synthetic preparation has not the same bouquet as the vanilla pod, nor is the perfume so lasting. It has, however, the great advantage of being colourless. Alcoholic solutions of vanillin should not be exposed to the light. They become slightly coloured, but the odour does not seem to decrease very materially.

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Members of the Pharmaceutical Society must address all communications with reference to the transmission of the Journal, to the Secretary, 17, Bloomsbury Square, London, W.C.

LONDON: SATURDAY, MARCH 1, 1902.

ANNOTATIONS.

Some Glasgow Doctors and Chemists seem to keep themselves and each other in a perpetual state of ferment about their more or less imaginary grievances, while they join forces to keep local journalists continually employed in dealing with more or less highly-coloured accounts of their troubles. It is not at all obvious why Glasgow should be so notorious in this respect, but the fact remains that it is, and nothing appears to please Glasgow newspaper men more than an exciting duel by correspondence between rival vendors of drugs. When interest is no longer maintained in the question whether the medical Codlin or the pharmaceutical Short is really the friend of the long-suffering drug-taking public, the subject is allowed to rest awhile, but not many weeks elapse before all other topics pall upon the Glasgow journalistic appetite, and an ingeniously fallacious article—written invariably by a "special" correspondent—is then published, with the inevitable red-flag-to-the-bull-like effect of setting medical men and chemists by the ears once more. Such has been the case on several occasions during recent years, and about a fortnight ago the old trick was once more played, with the usual conspicuously successful result.

At the Outset, a "special" correspondent of the *Glasgow Evening Times* was granted much space in that distinguished mirror of public opinion to describe how and why the medical faculty was in revolt (*sic*), while he explained the supposed grievances of chemists' assistants. He began with the grandiloquent statement that never in the history of the medical faculty of Glasgow and the West of Scotland in particular, nor in that of the chemists' and druggists' trade generally, has there existed so much dissatisfaction, irritation, and dissension as at present. The reasons for all this turmoil were then stated at considerable length, but not until the writer had proved the readiness of his wit by stating that the grievances of both professions are more closely associated with individual interest than with the treatment of the sick and afflicted. The fact that his grammar halted in expressing the foregoing opinion is a matter of minor importance, in view of the fact that he was probably adhering to the truth more closely than he knew. To continue, he served up to the readers of his lucubrations the time-honoured fiction that the Pharmaceutical Society is making a "dead-set" at all Glasgow doctors whose shops are in charge of unqualified assistants, while the trouble of chemists and druggists was alleged to be caused by the action of the Pharmaceutical Society in making its qualifying examination "so exceedingly stiff that in a short time it will be impossible to get assistants at all."

The Manner Adopted in the long screed which followed, for dealing with the worries occasioned by the Pharmaceutical Society's supposed misguided procedure, was to mix a little fact with a large proportion of fiction, in a particularly artful and ingenious fashion. The result was that neither medical men nor chemists were satisfied with the "special" correspondent's exposition, and for some days the columns of the *Glasgow Evening Times* groaned beneath the weight of arguments advanced on both sides. An "M.D." led the attack by declaring that the writer of the article did not put the matter entirely in the right light, and protesting that he was in error in speaking of doctors as encroaching on the chemists' trade. A "Doctor and Chemist Too" supported this lead by stating that the special article treated the subject in a very vague and one-sided manner, but he also posed as an apologist for the Pharmaceutical Society, asserting that the larger percentage of failures at the Society's qualifying examination was probably due to the fact that a number of students present themselves quite unprepared for the test. The next day, "Chemist" pointed out that the drug trade had been going from bad to worse for more than twenty years, blaming, as the chief causes for that state of affairs, the competition of stores and the "utter inability" of chemists to combine for their common good. Another correspondent, who signed himself "Only a Pharmaceutical Chemist," refuted the misstatements about the Pharmaceutical Society, and contributed a very sensible statement of the real facts of the case, but his communication was promptly followed by that of "Non-Patent," who blamed the Pharmaceutical Society for not suppressing counter-prescribing and the sale of cures for all ills, and reasseverated the fables which have so long done duty in this controversy on the medical side. And so the wordy warfare has continued from day to day.

The End of the Matter will doubtless be a stoppage of the unconvincing correspondence when public interest therein appears to wane and Glasgow journalists feel the need of a change of subject. But the sores on both sides will remain open, concealed for the time being perhaps, but nevertheless raw and irritating to those who bear them. Meanwhile, the rest of Great Britain, which has manifested no particular anxiety while the inky squabble was at its height in Glasgow, will maintain its normal demeanour and present an unruffled front whatever the result may be. The "special" correspondent may chance this time to be worried out of existence by the logical word-play of the doctors and chemists whose ire he has so artlessly aroused. But the bone of contention will remain, and the intermittent struggle will almost certainly be renewed directly one side or the other endeavours to take advantage by attempting to snatch it. The end may come some day, but that is not likely to be yet awhile--probably not until the wicked dispensing doctor ceases from troubling and the weary counter-prescribing druggist is at rest.

The Title "Public Analyst" has been the subject of dispute on occasion, and, in a letter recently addressed to the press, it is stated that the title is legally applicable only to certain scientific officers appointed by specified public authorities under the provisions of the Sale of Food and Drugs Acts, whose qualifications have been approved, and whose appointments have been sanctioned by the Local Government Board. Attention is directed to the matter at the present time because several newspapers have published reports of the proceedings at a recent dinner of the society known as the "Society of Public Analysts." The letter referred to is signed by five public analysts—J. Carter Bell, Charles E. Cassal, J. Kear Colwell, C. Howard Cribb, and W. F. Keating Stock—who speak of "the Society which is still incorrectly called the 'Society of Public Analysts.'" They state that, at the present time, only about 28 per cent. of the members of the Society are public analysts, owing to the fact that, as stated by its president, "the Society has widened its borders, and now includes other analytical chemists" and persons con- "with all branches of the chemical industry"—an expression of obviously wide application. The president is also reported to have said that "the great object of the Society was to ensure that its members were possessed of proper qualifications," a statement which, if left uncorrected, may cause serious misapprehension. Continuing, the signatories to the letter point out, what most people already knew, that the Society in question is not, in any sense, a qualifying body, and that its rules contain no specific requirements as to the scientific qualifications of candidates for admission to it, beyond the mere fact that each candidate must be recommended by three of the members, who testify "from personal knowledge" to his "scientific fitness." Indeed, it is stated, one of the previous presidents of the Society, when under examination before the late Food Products Committee of the House of Commons, found himself compelled to admit that membership of the Society did not imply the possession of any special qualifications. The only qualifying body connected with the profession of analytical and consulting chemistry is, of course, the Institute of Chemistry of Great Britain and Ireland, which was incorporated by Royal Charter in 1885, and grants diplomas of Associateship and Fellowship to candidates who, having gone through prescribed courses of study and training, have passed the examinations conducted by the Institute.

The Formula for Mandl's Solution appears to vary considerably, no less than nine correspondents having sent up formulæ, all of which differ to a greater or less degree. Hager's formula, which is probably authentic, differs from all the rest in containing carbolic acid, but no menthol or oil of peppermint. Some of the others contain an excessive proportion of potassium iodide, but nearly all agree in being approximately 1 per cent. solutions of iodine in glycerin. The omission of the carbolic acid in so many instances is curious, and affords a useful illustration of what may happen to a formula which has not received official recognition and yet enjoys a certain measure of popularity. A further argument is also supplied in favour of the suggestion published in these columns exactly twelve months ago, when it was urged that a useful purpose would be served by a compilation containing descriptions or working formulæ of old and new medicinal preparations, which have either ceased to find a place in the British Pharmacopœia or are not yet sufficiently established to receive official recognition. Such compilations, possessing a semi-official character, exist in Germany and the United States, and the continued existence of the B.P.C. Unofficial Formulary, trivial though that publication is, serves to indicate that something of the kind would serve an equally useful purpose here.

The Important Judgment of the High Court of Justiciary in the case reported at page 178 decides a point in pharmacy law which, so far as Scotland is concerned, has been in doubt since 1895, when Sheriff-Substitute Fyfe dismissed a complaint at the instance of the Registrar of the Pharmaceutical Society for selling an arsenical insecticide in contravention of Section 17 of the Pharmacy Act, 1868. The right of the Registrar to proceed being thus disputed, it might have been imagined that the Procurators-Fiscal would consider it a matter of duty to set the law in motion, but the Crown Authorities in Scotland, on being approached, have definitely and consistently refused to proceed, on the ground that it is the duty of the Registrar of the Pharmaceutical Society to prosecute for all offences against the Pharmacy Acts. In order to prevent the provisions of that Act becoming a dead letter in Scotland, the Council was therefore driven to appeal to the High Court for an authoritative ruling on the point at issue. That has now been given in the unanimous decision of the judges, as reported this week. The High Court being the ultimate Court of Appeal in Scotch cases under the Pharmacy Acts, it is now settled law that the Registrar has a title to prosecute in Scotland for contraventions of Section 17.

It is Noteworthy that the judges set aside the merely technical objections based on a critical examination of the actual words of the Section in dispute. The Court acted on the broad view that Statutes are to be interpreted according to their common-sense meaning and the obvious intention of the Legislature. From that point of view, there could be no doubt that it was intended that the Registrar should prosecute for all offences under the Acts in Scotland as well as in England, and it was therefore natural that the Court should decide the appeal in favour of the Society. Thus the Scotch Appeal Court has once again elucidated the language of the 1868 Act and determined its meaning. Both Lord Young and the Lord Justice-Clerk made most important and valuable statements in favour of the Pharmaceutical Society being entrusted with the administration of the Pharmacy Acts "as guardians of the public interest" and as being "the best party to do it," to quote the actual words of the two judges. It is well known that Lord Young has never shown any partiality for the Pharmaceutical Society, and his testimony on the question of public policy loses nothing in force from that circumstance.

"Nature Study" has been referred to by Sir John Cockburn in a letter to the *Times* as a subject of great educational value, especially in developing the faculties of observation and awakening a spirit of inquiry. Though much has already been done in isolated instances to stimulate the study of Nature in schools, little is known as to the extent or character of the work, nor is there any general agreement as to the best methods of instruction. To provide an opportunity for ascertaining what is practicable and expedient in that respect a committee has been formed to promote a "Nature study" exhibition, to be held in London about the end of July. The project has met with considerable support, and though its contemplated scope seems to be limited to the exhibition of ordinary natural history objects, gardening maps and photograpns, the subject matter covered by the so very comprehensive term "Nature study" is of much wider extent, and would well admit of being exploited to advantage with the view of cultivating sound conceptions of natural phenomena falling under the heads of physics, chemistry, physiology, etc. Information as to the details of the exhibition can be obtained from the Honorary Secretary, Mr. John C. Medd, Stratton, near Cirencester.

THE PROPOSED MARTINDALE MEMORIAL is referred to by two correspondents in this week's Journal, and a peculiar appropriateness attaches to Mr. Wright's suggestion of a Martindale medal, to be awarded under the same conditions as the Pereira medal, but for special proficiency in practical pharmacy. The modern British pharmacist is certainly not over-examined in the particular subject in which he ought to be an expert. The time devoted to practical pharmacy in the qualifying examination is deemed by many to be insufficient, and the subject is altogether excluded from the syllabus of the Major Examination. Neither is the Pereira medallist expected to know any more about the subject than the average successful Minor candidate. Apparently, therefore, an opportunity is presented by Mr. Wright's suggestion to recognise the importance of practical pharmacy to an extent that is not now done, whilst also establishing an exceptionally appropriate memorial to one who—as Mr. Wright so fitly puts it—made the subject his life-study and attained an unquestioned pre-eminence in that department. Of the other suggestions which have been offered, the erection of a marble bust of the deceased pharmacist in the Examination Hall at Bloomsbury Square appears to have been received with most favour up to the present. The preliminary meeting to consider the matter will, as previously notified, be held in the Pharmaceutical Society's London house on Tuesday next, March 4, at 3 p.m. All pharmacists who are interested in the subject are invited to attend and take part in the proceedings on that occasion.

THE DISCUSSION ON PROPRIETARY ARTICLES has led the *Grocer* to direct attention, in a note headed "How the Chemists Manage It," to an extract from Mr. Glyn-Jones's February report on the work of the Proprietary Articles Trade Association and the Chemists' Defence Association. In that report it was pointed out that the preceding two or three months had been among the most prosperous in the history of the P.A.T.A., an addition of eleven names to the Association's list of manufacturing firms constituting a record for that term. The C.D.A. had also, during the month, followed up its successes. In two cases the prosecuting analyst had been in error. In one case, on the day before the hearing, the C.D.A. solicitor gave notice to the prosecuting analyst to be present. The solicitor appeared in his stead, and made a statement that the analyst had made a mistake, and that he desired, in consequence, to withdraw the case. The Magistrate, replying to an application by the C.D.A. solicitor for costs, declined to allow any, stating that a mistake had been made. In the second case the defence was more fortunate, having requested that the reserve sample should be sent to Somerset House, where the analysts reported at variance to the prosecuting analyst. The case was withdrawn in Court, and the magistrate gave effect to an arrangement between the solicitors for the prosecution and defence, whereby the Borough Council paid five guineas to the defendant. Those cases, it was thought, ought to show the importance of the defence contesting Sale of Food and Drugs Acts prosecutions, since it was more than probable that if the two cases had not been dealt with by a solicitor who was well up in the technicalities of the adulteration laws the defendants would have been convicted. The brief but pointed comment of the *Grocer* upon this report is: "Why cannot we have similarly useful protective organisations in the grocery trade?"

ANALYSTS' SHORTCOMINGS are commented upon in the same issue of the *Grocer*, which points out that time after time lately the authorities, in the persons of their analysts, have been flatly contradicted as to the constituent parts of certain analysed articles, and have been defeated in the Courts. An explanation is asked for, as the matter is not one of legal contention or of argument, but of fact. Readers of reports of such cases wonder how such strange differences in results are arrived at, and various questions may well arise in their minds, such as the following, suggested by the *Grocer:* Do the officials conduct the analyses themselves or by deputy? Are the deputies competent to be trusted with duties so delicate and fraught with such serious results? Are the analyses conducted, whether by the official or a deputy, with a due degree of care and thoroughness, or are traders to suffer from the effect of slipshod work? These are described as questions which seem likely to have a material bearing on the question. The analysts' reputation, according to the *Grocer*, is never too high in the eyes of traders, and, whether that estimate be justified or not, is necessarily lowered by the reverses analysts meet with in the Courts. Meantime the matter is not unreasonably urged to be of very serious importance for traders, who may suffer unjustifiably, both in reputation and in pocket. Against this sort of thing all grocers' associations are advised to protest, and to continue to protest, in the hope that such a glaring grievance may, in time, come to be recognised and then redressed.

SCOTTISH PHARMACISTS have already rendered good service to their craft by promoting the improvement of that part of the statutory qualification which might be expected to operate in preventing insufficiently educated youths from entering the business. Another step is now being taken to provide for better teaching of apprentices, for though the scheme propounded by Mr. Tocher includes an appeal for the granting of a science degree in pharmacy, its main feature is the invitation to provide facilities for the study of those sciences with which candidates for qualification under the Pharmacy Acts are required to be conversant. In that respect Mr. Tocher's proposal appears to be another attempt to establish a compulsory curriculum, and to do away with the one stumbling-block of voluntary education, which has hitherto been the most serious obstacle to such advancement and protection of the interests of the craft as it is the object of the Pharmaceutical Society to promote. The scheme put forward by Mr. Tocher relates more especially to Scotland, and it has probably been suggested by anticipation of the Carnegie trust funds being made applicable in support of the education of pharmaceutical students; but, apart from that circumstance, it is one of importance to the entire nation. Such an important step as that suggested on the part of the Scottish universities could scarcely be taken without concurrent establishment of similar facilities for instruction by other British universities.

THE EMERALD GREEN PROSECUTION has excited the usually sedate *Ironmonger*, which somewhat inconsequently remarks that the question is being discussed whether any but a registered chemist is entitled to sell that substance. Emerald green is undoubtedly a poisonous compound of arsenic, and a representative of a drug company was recently fined at Leeds for selling it in contravention of the Pharmacy Act, but nothing is known in pharmaceutical circles about any discussion on the subject. The local authorities at Leeds instituted a prosecution under Section 17 of the Pharmacy Act, but that was without the concurrence, or even the approval, of the Pharmaceutical Society, and it is, therefore, absurd to refer to the matter as though the prosecution had been instituted in the interests of registered chemists. Yet that is what the *Ironmonger* does, on the ground that sufficient inconvenience has been caused already by the claim (*sic*) of chemists to the exclusive trade in poisonous disinfectants, and that the colour trade cannot afford to allow this case to go forward as a precedent. It has yet to be proved that any inconvenience has been caused to the public by the legal restriction of the sale of poisonous disinfectants, and it is surely somewhat premature to urge that, if the ordinary retailer of paints cannot sell poisonous colours as the law stands, it is time that steps were taken to get the law altered.

Mr. Leo Atkinson is to be congratulated upon the successful outcome of his negotiations with the Board of Inland Revenue, respecting the manner in which medicine stamps are to be affixed to packages. Objection had been taken to the practice of affixing the stamps outside the wrapper enclosing the bottle, box, or other inclosure containing the medicine, the Board being apparently under the impression that greater facilities were thus afforded for removing the stamps intact and using them over again. After a very prolonged correspondence, Mr. Atkinson obtained permission to demonstrate to the Board that it is impossible to affix the stamps in such a manner that they cannot be removed without injury, if anyone cares to take the trouble to remove them. Moreover, he seems to have convinced the Board that the supposed danger to the Revenue incurred by the possible removal and repeated use of the stamps is virtually a non-existent one. Mr. Michael Carteighe, who accompanied Mr. Atkinson on the occasion referred to, was also able to offer a plausible reason in favour of the very common practice of affixing medicine stamps on the external wrapper, so as to be plainly visible, and the result of the conference is, as explained in Mr. Atkinson's letter (see p. 181), that the Board of Inland Revenue has undertaken for the present to abstain from rigidly enforcing a literal compliance with the provisions of the Medicine Stamp Duty Acts, in so far as regards the method of affixing stamps.

The President of the Pharmaceutical Society, speaking at the inaugural dinner of the Huddersfield and District Chemists' Association, on Wednesday last, said he attached great importance to the cultivation of the professional side of pharmacy, and the chief thing essential for proper development in that direction was that the question of education should be placed in the front rank. The need of improved education for pharmacists had been recognised by the Government, and it would be well if registered chemists who blamed the Pharmaceutical Council for devoting so much attention to education were to recognise the supreme importance of the matter, since it was their position as educated men which alone entitled them to resist such proposals as were now being put before the Privy Council's Poisons Committee. It was a dangerous proposition that seedsmen and other unqualified persons might, under certain conditions, be permitted to sell scheduled poisons, and it might be necessary at some future time to call upon the chemists of the country to resist that, but it must be remembered that the case for restriction was largely based upon the educational qualification of chemists.

Obituary.

Booth.—On February 21, James Booth, Pharmaceutical Chemist, Blackburn. Aged 73. Mr. Booth, who had been a member of the Pharmaceutical Society since 1853, was a native of Blackburn, and served his apprenticeship with Mr. T. Moscrop, chemist and druggist. In 1852 he took the business of the late Mr. H. A. Wraith, at 5, Darwen Street, Blackburn, which he retained until June, 1901, when he retired. In addition to carrying on the business of a chemist Mr. Booth was also a cotton spinner, and owing to his taking the Wellington Mills, Turton, he went to live at Edgworth in 1865. At that time the mill was a small spinning concern, but Mr. Booth considerably enlarged the mill, adding about 12,000 new spindles to the 10,000 the mill contained when he became its proprietor. Mr. Booth served as overseer and Poor Law guardian in the township of Edgworth, and for several years represented Turton on the Bolton Board of Guardians, and had been chairman of the Derbyshire Silkstone Coal Company from its foundation. He was a member of the old Turton Local Board from its commencement, and had also been a member of the Rural District Council, and for several years officiated as chairman on both bodies.

Buck.—On February 19, Thomas Buck, Chemist and Druggist, Middlesbrough. Aged 61.

Dowling.—On February 18, Robert Dowling, Chemist and Druggist, Reading. Aged 36.

Eccles.—On February 18, Henry Eccles, Chemist and Druggist, Scarborough. Aged 65. Mr. Eccles was a bachelor, and, according to the local newspapers, possessed considerable property. He is said to have died worth over £10,000, and his only relative is supposed to be a brother—John Eccles—who was last heard of as being at Liverpool about a year ago.

Green.—On February 23, at Henley-on-Thames, Mary Elizabeth, wife of George Turton Green, M.P.S. Aged 30.

Harvey.—On February 21, Joseph Smith Harvey, Chemist and Druggist, Penzance. Aged 71. Mr. Harvey had been a member of the Pharmaceutical Society since 1871.

Haslam.—On February 20, Charles Junius Haslam, formerly a Chemist in business at 19, Clayton Street, Newcastle-on-Tyne. Aged 91. Mr. Haslam, who retired from business in 1879, the *Manchester Guardian* states, was from 1829 to 1860 resident in Manchester, where he took an active part in the Chartist movement. He was a native of Widdrington, where he was born in 1811, and served his apprenticeship at Morpeth. On taking up his residence at Manchester he joined the Radical Association of the workmen, and became the secretary of that organisation. Mr. Haslam was a theist, and his "Letters to the Clergy" were denounced by Bishop Philpotts in the House of Lords, a person named Hethrington being imprisoned for selling them. Mr. Haslam left Manchester in 1860 for Newcastle. In spite of his great age he retained his intellectual faculties and his interest in public affairs, and was as outspoken in his opposition to the South African war as he had been to the Conservative policy of his younger days.

Jones.—On February 18, William Jones, Chemist and Druggist, formerly of Corwen

Robbins.—On February 20, William Liptrot Robbins, Chemist and Druggist, Leamington. Aged 76.

Wilding.—On February 25, George James Wilding, Chemist and Druggist, Birkdale (Lancs.) Mr. Wilding, who had been connected with the Pharmaceutical Society for many years as an Associate and latterly as a member, had been out cycling on the day of his death, and expired suddenly shortly after his return, the cause being heart disease.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

NORTH BRITISH BRANCH EXECUTIVE.

A meeting of the Executive of the North British Branch was held in the Society's House, 36, York Place, Edinburgh, on Friday, February 21, 1902, at 10.15 a.m., Mr. **Peter Boa** in the chair. Other members present were Messrs. Cowie, Doig, Dunlop, Fisher, Henry, Johnstone, Kerr, Maben, McAdam, Mitchell, Naysmith, Russell, Spence, Storrar, Strachan, and Tocher. An apology for absence was intimated from Mr. W. L. Currie.

The minutes of last meeting were read and approved.

The Late Mr. William Martindale.

Mr. **David Storrar**, before the beginning of the ordinary business, said that since their last meeting they had lost by death one who quite recently was their official chief, who was the valued friend of many there, and who was one of the most distinguished members of the profession to which they all belonged. He need scarcely say that he referred to Mr. Martindale, whose loss they all deplored. It was only seemly that before commencing the business of the day they should express, however inadequately, their sense of the loss which pharmacy had suffered by his death, their appreciation of his life work, and their sympathy with his family. He asked permission, therefore, to propose the following resolution:—

> That the Executive resolves to express in its minutes its sense of the great loss which pharmacy and the Pharmaceutical Society have sustained by the death of Mr. William Martindale, and its sincere and heartfelt sympathy with his widow and family in their bereavement. A distinguished student as well as a successful worker in pharmacy, Mr. Martindale freely placed at the disposal of his professional brethren the results of his experience. As an examiner, member of Council, and President of the Society he gave it much hard, conscientious and valuable work, and, as a friend and colleague, he was looked up to and respected for his upright and honourable personal character. The Pharmaceutical Society has never lost a truer and more devoted friend, and no name will be held longer in appreciative remembrance by its members than that of William Martindale.

The loss they had sustained was so real and self-evident that it was unnecessary for him to say a single word more in support of this resolution. Patient, persevering, thorough, and a master of detail, Mr. Martindale was an ideal pharmacist, who rendered unique service to prescriber and dispenser alike, and his name was a household word wherever British pharmacy was practised. To public work of many kinds he brought the same conscientious thoroughness and devotion to duty. He could not do slipshod work or content himself with a general view, but had to dissect and analyse it to its minutest details. That habit of mind told heavily upon him, and his health had suffered in consequence. Though cut off in his prime, or at least in life's ripest and most fruitful period, he had left a splendid record and a completed life work. It would be difficult to over-estimate the value and usefulness of that work, or the high place Mr. Martindale had made for himself in the history of pharmacy. And yet he believed, by those who knew him, he would be even better remembered on account of his attractive and engaging personality and his generous and kindly heart. He proposed that the resolution be inserted in the minutes of that day's proceedings.

The **Chairman**, in putting the resolution to the meeting, said he had known Mr. Martindale personally and had met him frequently during the last twelve years. The longer he knew him and the more he saw of him the higher was his opinion and the greater his regard for him. He felt that, personally, he had lost a very good friend. He seconded the resolution Mr. Storrar had proposed.

The resolution was adopted by the members standing.

Scotch Universities and Pharmaceutical Education.

The report of the General Purposes Committee was read, from which it appeared that the Committee had received a report from the Committee of the Board of Examiners, consisting of Professor Bower, Dr. Dobbin, and Mr. James F. Tocher, anent the remit relating to the Carnegie Trust and the question of a University training for students of pharmacy. The report was accompanied by a draft scheme and explanatory statement providing a systematic course of instruction for the Minor or Qualifying Examination of the Society, and also a further course on the lines of the Major Examination Syllabus, and including a science degree, to be called "Bachelor of Science in Pharmacy."

Standing Orders for the Executive.

The General Purposes Committee reported that they had considered a draft of Standing Orders by Mr. Anderson Russell. While thanking Mr. Russell for the great pains he had taken in the matter, the Committee unanimously recommended that definite Standing Orders should not be enacted, but they were of opinion that Mr. Russell's object would be attained by the Chairman at the first meeting of Executive after the annual election stating the general lines on which the business was conducted.

It was moved by Mr. **Russell**, seconded by Mr. **Fisher**, that the report be remitted to the Committee, on the ground that there was no adequate time to discuss it now.

It was moved by Mr. **Spence**, seconded by Mr. **Doig**, that the Committee's recommendation be adopted. By the casting vote of the Chairman the second motion was carried.

Communication from Aberdeen Members.

The **Assistant Secretary** read a communication from certain members of the Society in Aberdeen, which had been considered by the General Purposes Committee, indicating that they were under the impression that the counting of the votes in the election of Executive in 1900 had been so conducted as to disclose the way in which Aberdeen members had cast their votes in that election.

The **Chairman** explained the facts to the Executive, and it was agreed to send a copy of the Chairman's statement as a reply to the members in Aberdeen who had brought the subject before them. The reply was to the effect that

> The Executive feel satisfied that the members who have addressed them on this subject will accept their assurance that, in view of facts that are not in doubt, there is no ground whatever for any complaint, and that no member need have the slightest fear that anyone can ever know how his vote is cast.

Jubilee and Diamond Jubilee.

The General Purposes Committee reported that the Jubilee of the North British Branch and the Diamond Jubilee of the Society had been celebrated by a dinner of Scottish Pharmacists on December 10, which was largely attended and highly successful, the Council being represented by the President and Messrs. Carteighe and Storrar.

Preliminary Examination Certificates.

The Special Committee appointed to consider the question of Preliminary Examination certificates, so far as it affected Scotland, reported that they had agreed to the following resolution:—

> The Committee suggest that candidates possessing leaving certificates be allowed to complete the examination by passing the remainder of the subjects under any of the examining bodies recognised by the Society, always provided that the six subjects have been passed at not more than two examinations.

Mr. **Maben**, in moving the adoption of the recommendation, said the Committee felt they could not go into the whole question of the registration of pharmaceutical students in Scotland. It was too wide a question, and raised other points that were *ultra vires.* They therefore restricted themselves to the original proposal, which was practicable.

Mr. Fisher seconded the motion, which was agreed to, and ordered to be sent to the Council.

Date of Next Election.

It was moved by Mr. Strachan, seconded by Mr. Maben, and agreed :—

That the next election of Executive take place on Friday, June 20, 1902, and that the Chairman and Vice-Chairman be appointed scrutineers of the voting papers, with power to add to their number.

The Executive then adjourned till the close of the Conference (see below).

The Carnegie Trust and Pharmaceutical Education.

On resuming, the Executive considered the report of the General Purposes Committee on the remit as to the Carnegie Trust and Pharmaceutical Education. It was further reported that the question of university training for pharmaceutical students and the institution of a Bachelor of Science degree in pharmacy had been brought forward by Mr. Tocher at a conference of Scottish pharmacists held there that day, and that the meeting approved of the idea and recommended it to the Executive. The Executive unanimously agreed to forward the scheme submitted by Mr. Tocher and the information collected by him to the Council for their information and consideration. In the meantime, the Executive remitted to the General Purposes Committee to co-operate with Mr. Tocher and his colleagues, Professor Bower and Dr. Dobbin, in any necessary steps for the furthering and elaborating of the scheme.

The Annual Report.

The Executive went into committee to consider the annual report to the Council, and, on resuming, the draft report was approved of and remitted to the General Purposes Committee for final adjustment and transmission to the Council at the end of April.

The Board of Examiners for Scotland.

Mr. Henry brought under the notice of the Executive a report of the Board of Examiners for England and Wales dealing with questions remitted to them by the Council, and mentioned particularly the matter of certificates of the Scotch Education Department. In this connection he also referred to statements made by counsel for the Society in the case of Strachan, and he proposed that some inquiry should be made into the matter. It seemed to him that a distinction was being made between the Board of Examiners for England and Wales and the Board of Examiners for Scotland, while the Pharmacy Act provided that the two Boards were equal. He did not make the proposal in any hostile spirit, but in a friendly way for the purpose of getting information.

After some conversation it was agreed that Mr. Storrar should mention the matter at the next meeting of Council in London. The meeting then closed.

EDINBURGH CONFERENCE ON EDUCATION.

At a meeting held in the Society's House, 36, York Place, Edinburgh, on Friday, February 21, 1902, at 11.15 a.m., Mr. Peter Boa took the chair, and there was a large attendance, including the members of Executive and the Board of Examiners, and a number of Divisional Secretaries, also several members of the teaching staff of the University of Edinburgh and the principals of the Schools of Pharmacy in Edinburgh and Glasgow, and a contingent of students.

Mr. J. F. Tocher, F.I.C., read a paper on

The Scottish Universities and Pharmaceutical Education.

in which he propounded a scheme for the furtherance of pharmaceutical education. He proposed that the universities of Scotland should be invited to provide facilities for a university training suitable for pharmaceutical students working towards the Qualifying Examination for registration under the Pharmacy Acts, and, in addition, to recognise the profession of pharmacy by the institution of a science degree which would be at the option of, and open only to, registered chemists and druggists. It was pointed out that the problem of pharmaceutical education and its relationship to the legally qualifying examination is an exceedingly difficult one, and that the Pharmaceutical Society had made great efforts on behalf of education. The foundation of the Society in 1842 of the School of Pharmacy in London, and its successful conduct by the Council for sixty years, was a standing monument of the persistent labours of the Society on behalf of a thoroughly scientific and practical education for pharmacists. That school has proved a distinct force not only in pharmacy but in the scientific world, and the names of many of its prizemen and scholars—Schacht, Paul, Ince, Groves, P. W. Squire, Attfield, Holmes, Tilden, Carteighe, Martindale, Luff, Greenish—are the names of pioneers and champions of education, well-known pharmacists, and distinguished scientists. Despite the indefatigable efforts of Jacob Bell and his coadjutors in the forties, and of Schacht and the Council in the early seventies, provincial education under the wing of the Society has been comparatively fruitless, owing to want of the necessary powers. But the increased stringency of the examinations has been the means of creating many schools of pharmacy where practically all pharmaceutical students are equipped for examination. So that, from the point of view of pure preparation for examination alone, there are abundant facilities for the student in the metropolis and the chief cities in England and Scotland.

In the case of those schools, however, a difficulty exists, owing to the fact that the teachers do not get a chance to do more than prepare the student for examination—they do not get any opportunity to instil sound knowledge as they would like to, and for two reasons. The student desires to compress the acquisition of the necessary knowledge into the shortest possible period of time, and, despite the ability and herculean efforts of the teachers, it is impossible to impart the necessary information in all the subjects within the time desired. If the hard-worked teachers in those schools could be relieved of the purely scientific subjects and left free to teach pharmaceutics alone, a great benefit would be conferred on the student, powerfully influencing in this way the future of pharmacy. The teachers of pharmacy should be recognised by the universities in pharmaceutical subjects, or appointed the university lecturers under the scheme, or both. The schools of pharmacy have rather paved the way and prepared the ground for a definite advance, but voluntary education is a stumbling-block, and an endeavour should be made to secure a definite system of education, in the form of a regulated curriculum, that will at once attract students of pharmacy by reason of its obvious advantages.

Synopsis of the Scheme.

The following skeleton of the scheme gives an idea of its main features :—

(1) To afford facilities to pharmaceutical students working towards the Minor (Qualifying) Examination of the Pharmaceutical Society of Great Britain to attend courses of lectures in botany, chemistry, physics, pharmaceutical materia medica, pharmacy, by including in such lectures, demonstrations, and laboratory work, the instruction necessary to pass the said examination for registration as chemists and druggists, the legal qualification to practise as pharmacists.

(2) To institute lectureships in pharmaceutics (pharmaceutical materia medica and pharmacy) in each of the Scottish universities, and to include the annual payments neces-

sary for such lecturers with demonstrators, in their application to the Carnegie Trust.

(3) To provide, where required, the necessary accommodation and equipment for each lecturer on pharmaceutics, and for pharmaceutical students desiring to get instruction in the courses before mentioned.

(4) To institute a degree in pharmacy on lines similar to the science degrees in agriculture, engineering, etc., to be called "Bachelor of Science in Pharmacy," to be open only to registered chemists and druggists.

(5) To recognise, where necessary, in such subjects as may be considered proper, and when applied for, schools and classes where proper instruction is given and competent teachers are employed, as qualifying or assisting to qualify for graduation in pharmacy, so that pharmaceutical students attending any such schools or classes may be admitted to the privileges of the Carnegie Trust, Clause B, and so that such schools may participate in any benefits they may be entitled to under Clause A of said Trust.

The first clause in the scheme deals entirely with the courses of lectures for Minor candidates. Botany, chemistry, and physics being taught at the universities, pharmaceutical students would receive the benefit of the general first course in common with medical, science, and other students, and would pay special attention to the matter contained in the Minor syllabus, of which the teacher would be made fully aware. The recognition of medicinal plants, a special feature in the Minor syllabus, and a quite elementary knowledge of physics included under chemistry in the syllabus, are facts which would be noted, and special lectures and demonstrations given to complete the instruction necessary. The instruction in practical chemistry as designated in the syllabus is proposed to be divided between the chemistry department and the contemplated pharmaceutical one. This is proposed because, in addition to practical chemistry pure and simple, the syllabus includes pharmaceutical assaying, which is more the province of a lecturer on pharmaceutics than a professor of chemistry. The second and third clauses are of the nature of an invitation to the universities to institute lectureships in pharmaceutics, and to form a pharmaceutical department in each university under the wing of the professor of materia medica. In the contemplated pharmaceutical department the student would receive instruction from the lectures in the various branches of his technical subject—pharmaceutics. It is not proposed to make this department merely a lecture-room and a dispensing laboratory. Besides giving insight to Minor candidates, and in order that it should be suitable for the B.Sc. Pharm. course, it is proposed to be a thoroughly equipped place where instruction could be given in (1) the operations of galenical pharmacy, latest manufacturing processes, and general principles of pharmacy practically expounded; (2) pharmaceutical assaying, in its widest sense; (3) prescription reading, posology, and dispensing, which would include the more modern forms of prescribing medicaments for public use; (4) materia medica from the purely pharmaceutical side; (5) pharmacy law, pharmaceutical book-keeping, and the remaining branches. Accommodation and equipment are also contemplated for scientific research. It is obvious that if a lecturer is called upon to cover this ground he must get assistance. A demonstrator in materia medica who would assist or take charge of the dispensing and otherwise, would supply the necessary want. The relationships between the professor of materia medica, the lecturer on pharmaceutics and the demonstrator, would be a matter for consideration and adjustment at a later stage.

The Position of the Universities.

The universities have been for some time considering the requirements and extensions necessary to meet modern needs. It is also known that the expense so far as the objects pertain to scientific instruction and equipment will be met largely from the funds of the Carnegie Trust. From a perusal of the conditions of the Trust, it is thought to be clear that assistance from the Trust can be obtained by pharmaceutical students. If pharmaceutical departments should be established at the universities, the question whether students would secure the payment of fees by the Trust depends entirely upon the preliminary examination the student chooses to pass. The student must ascertain the nature of the certificate recognised by the Scottish University Commission, for those alone will entitle him to participate in the Trust benefits, and if he can find any among them, also recognised by the Pharmaceutical Society, his path is easier. A pharmaceutical student working towards the Minor Examination should simply matriculate under the medical faculty and the medical Preliminary Examination—recognised both by the Pharmaceutical Society for its object and the Carnegie Trust for its special purpose—is the examination plainly indicated to him.

Though there is something to be said in favour of attending classes during the apprenticeship period, for the majority of apprentices that is not possible. The apprenticeship must be regarded as a kind of technical curriculum compulsory on the young pharmacist. At present the apprentice almost invariably serves his apprenticeship and then proceeds to the pharmaceutical classes, which is a scientific curriculum of rather short duration, voluntarily undertaken by him. The plan of taking the scientific course of instruction after apprenticeship or pupilage is universal on the Continent, and it is a natural and workable plan. It does not distract the apprentice nor worry the pharmacist. It must not be taken to mean that he is not to study or that he is to be kept morning, noon, and night at the grindstone. The era of drudgery and long hours is passing away. It simply means that the apprentice must have time to acquire the art of pharmacy in all its branches from his principal. If, after apprenticeship, the student becomes an assistant in a university town, and has time, he could take the first courses in chemistry and botany, and proceed further in easy stages. It would, however, be better for his comfort and prospects of success to serve as an assistant for some little time and then leave the pharmacy for his course of instruction, just as students do at the present time. That course will most thoroughly prepare him for the Minor Examination, and equip him as a pharmacist.

A Degree in Pharmacy.

The proposal to invite the universities to institute a science degree in pharmacy has the appearance of rendering the Major examination needless, and creates a new title in pharmacy not in the power of the Pharmaceutical Society to grant. It is proposed that the title should be "Bachelor of Science in Pharmacy," and the conditions necessary to attain the degree would be somewhat similar to other science degrees, the student passing (1) the preliminary examination for graduation in science; (2) the first science examination; and (3) the final science examination. Further, the candidate must be a registered chemist, and must, in the course of not less than three years, have attended at least seven courses of instruction in mathematics or biology, physics, chemistry, botany, materia medica, and pharmacy, which are the subjects in which he will be examined for the degree. In framing the regulations for the degree, it has been designed that the university training of the assistant-students working towards the Minor Examination should be utilised to form the first part of the curriculum for the degree. And, as it is undesirable to have a title in pharmacy which does not include the right to practise, it is made a condition that intending graduates should be registered chemists and druggists. The course, after qualification as chemists and druggists, is practically a course for the Major

Examination, the final science examination, as drafted, being simply the Major syllabus with some slight alterations. Thus the chief difference between the legal diploma of a pharmaceutical chemist and the proposed degree of B.Sc., Pharm., would be the curriculum, and the training which it assures.

If desirable, the Society could recognise the graduate and give him the Major diploma, and the Society would probably lose an insignificant sum in respect of probable Major candidates annually. It should not abandon the right of examination, and cannot cease to govern the qualification for pharmacists merely because of the institution of a pharmacy degree. In other respects the institution of a degree in pharmacy will affect the Pharmaceutical Society just as much as and no more than the division of the Minor Examination will. Such division means simply the separation of the purely scientific from the technical subjects, and it is the opinion of the best pharmaceutical authorities that the scientific subjects, chemistry and botany, should be taken at the universities and university colleges on a basis recognised by the Society as forming part of the Minor, and where provision could be made for pharmaceutical examiners acting as assessors. As soon as the Minor is divided in this way, it would be recognised, together with one other subject, as the First Science Examination for the Degree. The Board of Examiners will always consist of university teachers and practising pharmacists, and, if also appointed by the Society, the lecturers on pharmacy, who are designated in the Draft Regulations to take part in the examination for the degree. Thus the division of the Minor, a definite curriculum, and a science degree all fit into one another and become a harmonised whole.

HOW THE SCHEME WOULD WORK.

The examinations will go on just as though a university training and degree had never been heard of. An apprentice in Scotland, prior to entering or during his apprenticeship, will pass such an entrance examination as will entitle him to registration as an apprentice or student, and to the benefits of the Carnegie Trust. He has his chance; the medical preliminary for that faculty, if he merely contemplates taking university classes without a view to graduation; or the science preliminary for matriculation in that faculty, if he purposes finishing up with the degree. He attends his lectures in chemistry and botany, and also takes the laboratory course. When the division of the Minor is accomplished, he can, at the end of his course, take the first division, consisting exclusively of the foregoing purely scientific subjects. During the first session he may, if he likes, also take physics and zoology, and complete his first science examination, in which case he has taken his first step towards the degree. It should be mentioned that his physics will also include practical optics, so that he will be trained in the fundamental principles on which vision testing is based. The Minor candidate, however, may elect instead to take the other subjects necessary for the Minor, in which case he would add materia medica and pharmacy to his previous subjects. He is disadvised, however, from taking all his subjects together during the first session, but should take materia medica and pharmacy separately during the next session. As a trial, in the first instance a year is tentatively proposed for the Minor course. He is fit to present himself, in course of time, for the Minor examination, and having done so and been successful, he has embarked on his career as a pharmacist. As at present arranged, he has to stand for the Minor examination at one sitting, but if this examination was separated into two distinct parts, the candidate having already taken botany and chemistry, would now be examined in pharmaceutics alone, but in a manner enabling him to exhibit a more practical knowledge of this subject than is presently the case.

But taking things as they are, the student, having passed the Minor, may now elect to go on to the degree. If he does, he must take four advanced courses in his former subjects—chemistry, botany, materia medica, and pharmacy, completing his three years of study for the degree. In pharmacy, which will be specially interesting to him, he will have pharmaceutical assaying, preparation of galenicals, and general manufacturing processes; in materia medica, botany, and chemistry he will mainly cover the ground of the Major syllabus. Having taken the seven necessary courses and fulfilled the other requirements, he is now eligible to enter for the final science examination, and, if successful, is entitled to the degree of Bachelor of Science in Pharmacy. He has now the advantage of being skilled in special departments, besides being a trained and competent pharmacist. He can go straight to the manufacturing laboratory with confidence; he can undertake special analytical work; or, upon finding a suitable opening in a retail business, his equipment and management of his pharmacy will secure recognition, and, no doubt, success. There are numberless posts that a B.Sc.Pharm. could occupy. He need not return to retail pharmacy at all, as he would be in the position of the pharmacist of the present day who takes the pure science degree, and is found at the top, while he would be eligible, as all Bachelors of Science are, to take the degree of Doctor of Science (D.Sc.). Objection may be taken to the conferring of this title on Bachelors of Science in Pharmacy, on the ground that the public might mistake the holder, if a retail pharmacist, for a qualified medical practitioner. In meeting this objection, one must bear in mind how seldom Bachelors of Science take the doctorate, and how few medical practitioners take the trouble to acquire the title of Doctor of Medicine. But the doctorates are open to them. It should also be borne in mind that at present the Doctorate of Science is already open to the pharmacist as it is open to the public.

OBJECTS OF THE DEGREE.

The prolonged and searching tests to which the Continental pharmacist is subjected would terrify a British pharmacist, let alone the student entering the Minor Examination. But they make the Continental pharmacist a more fully equipped man, with a higher status. The training has led to a greater participation in the advancement of pharmacy in its true sense—in the preparation and supply of medicaments, in the production of synthetic remedies, and in the opportunities afforded to explore the wide field of science. There have been material advantages in consequence. It is important, therefore, to consider whether we should not make the probabilities of commercial advancement greater in our midst by improving the means—by increasing the number capable of conducting research, and providing greater facilities for it throughout the country. In the research laboratory, generously provided free of charge by the Society, much good work has already been done, although the laboratory has not been taken advantage of as it ought to be. But a pharmacist who has studied in Manchester and has qualified in Edinburgh is unlikely to apply for admission to conduct research in London. There is a Research Fellowship of the Society. A title is not granted for the mere gratification afforded by the name, but for a practical purpose and in recognition of some attainment. The Society is prepared to recognise for its fellowship work done in other research laboratories where chemistry and botany as applied to pharmacy are made special features. In the proposed pharmaceutical departments of the universities research having a direct pharmaceutical purpose can be conducted.

In view of the rapid strides of medical and pharmaceutical science, it is of paramount importance that, in keeping abreast in knowledge of present remedies and of the ever-increasing new ones, pharmacists should also take a more prominent part in their discovery and introduction. The objects, then, of the degree in pharmacy are to provide a training that will fit the graduate to direct all the manufacturing operations of a pharmaceutical laboratory; to act as an analyst or chemist in the chemical industries generally to expand his business, if a retail pharmacist, and give him a higher standing; and to conduct research in the universities, commercial laboratories, and elsewhere. It is no new proposal, but an old one. Jacob Bell proposed it in substance. Schacht directly advocated it for a generation. It was the leading feature of Professor T. R. Fraser's able inaugural address to the North British Branch in 1889, when he advocated a university curriculum and diploma for pharmacists, and pointed out the disadvantages of an examination entirely conducted by persons who had taken no part in educating the candidates. It is a degree which has been in existence for many years in America. Special mention may be made of Philadelphia and New York Colleges of Pharmacy and Trinity University, Toronto, as granting it. The "Apotheker" and "pharmacien" possess its equivalent, and are eligible to graduate as Doctor of Philosophy in Germany, and Doctor of Pharmacy in France. These are the reasons for bringing the proposal before the universities of Scotland, and for suggesting that English universities should be invited to consider the matter. These are the grounds for advocating the establishment of pharmaceutical departments and the creation of lectureships in pharmacy, for they not only are practical proposals capable of swift realisation because of a great benefaction, but also desirable objects in themselves, in view of the relationship of the Society and the universities to the State and to the public.

Discussion.

The Chairman said they were all deeply indebted to Mr. Tocher for his lucid and elaborate exposition of the subject he had brought before then. They would adjourn now for some refreshment, and then proceed to confer with one another on the matter. Before doing so, however, he would ask Mr. Gilmour to say a word.

Mr. Gilmour said he had pleasure in proposing that they should thank Mr. Tocher. It was fitting that they should acknowledge the great service he had rendered in presenting such a mass of interesting material. He would like to congratulate Mr. Tocher on the large and representative audience which he had drawn out to hear his paper. He thought they might also congratulate themselves on having within their ranks one who could formulate, with such ability and completeness, the scheme now submitted for their consideration. He moved that the award to Mr. Tocher be a cordial vote of thanks. The meeting passed the vote with acclamation, and then adjourned to meet in private conference after luncheon.

The Conference, which lasted for two hours and a-half, proved exceedingly interesting, and was taken part in by a large number. At the close of the Conference the Chairman said it was gratifying to find that the idea of a university training for pharmaceutical students had received the commendation of all who had spoken. Of course, it could not be expected that they should commit themselves to the details of Mr. Tocher's scheme or any other scheme on so elaborate a subject. He thought they had wisely avoided going into such details in their discussion. He would assume that the meeting agreed as to the desirability of a scheme of university training in the interests of students and the future of pharmacy generally. This was agreed to, and the Chairman thanked those who had taken part in the discussion, and especially the members of the university staff. He also expressed the indebtedness of the Society to Professor Bower and Dr. Dobbin for the invaluable assistance they had given to Mr. Tocher.

A cordial vote of thanks having been awarded to the Chairman, on the motion of Mr. Fisher, the meeting closed.

PLYMOUTH JUNIOR CHEMISTS' ASSOCIATION.

The junior assistants and apprentices of the Three Towns held their inaugural dinner at Day's Restaurant, Devonport, on Wednesday, February 19, when Mr. A. Norman-Harris presided, and was supported by the members of the Committee. After the toast of "The King," Mr. Groombridge proposed the toast of the

Pharmaceutical Society,

to which Mr. Ross responded.

Mr. Lovatt then proposed the toast of

Plymouth, Devonport, Stonehouse, and District Chemists' Association,

and referred to the interest taken by the senior members in this revival of the Junior Section, and he hoped that all the members present would assist in successfully carrying out the programme they had in hand.

Mr. S. E. M. Venn replied, and

Mr. Kilpatrick then asked those present to drink to the success of the

Three Towns Junior Chemists' Association.

In a few well-chosen remarks he referred to the enormous advantages to be gained, both socially and educationally, from such an association.

Mr. Lord responded in a brief speech, and at this stage several seniors arrived, including the President, Mr. C. T. Weary, who was received with much enthusiasm.

Mr. Weary, in thanking all for the splendid reception they had given him, said he trusted this was an emblem of the good feeling which existed between the Senior and Junior Sections; he hoped members would make use of the library and materia medica museum, which had been given them for their sole benefit, for the knowledge they could obtain by an examination of the specimens would be of considerable advantage to them. He then invited the juniors to take a walk with him when the weather became warmer through Mount Edgecumbe Park, and after tea to see some of the splendid botanical specimens for which the park is famed.

The toast of

The Visitors

was proposed by Mr. Groombridge, and Mr. Spear, in reply, trusted that as much interest would be shown in taking part in the meetings and discussions as had been shown in their inaugural dinner.

Music, recitations, etc., were given by Messrs. Weary, Spear, and other members of the Association.

HASTINGS AND ST. LEONARD'S PHARMACEUTICAL ASSOCIATION.

A meeting of this Association was held at the Castle Hotel, Hastings, on Friday, February 21, when the chair was taken by Mr. Rossiter.

The Chairman explained that this was practically the first formal meeting of the Association, and, after referring briefly to past and present attempts to organise pharmacy in the Hastings district, he called upon Mr. Glyn-Jones, of London, to address the meeting.

Mr. Glyn-Jones said he proposed to say

Something About Organisation.

During the past seven years the number of local pharmaceutical associations had doubled in number, and that must be regarded as a satisfactory feature of the times, since chemists had suffered much from lack of local organisation. Experiences in endeavouring to start local associations were described, and reference was made to the manifold advantages of being connected with such bodies, many of which were said to be doing much good work, quietly and in private. Various directions were indicated in which local associations might confer great benefit upon their members, such as co-operative buying, fixing of prices, etc. Membership of the Pharmaceutical Society was also advocated by the speaker, who said he had no sympathy with outside critics of that body. Passing next to the claims upon chemists of the Proprietary Articles Trade Association, the speaker said that many people who were in the habit of saying that an organisation had done nothing for them forgot that they had not a shadow of a right to complain. The chemists and druggists of the country were responsible for such faults as afflicted the Pharmaceutical Society, as it had always been in their power to make it what they liked. No legislation affecting pharmacists was likely to come except through the Society. Apart from that, however, the possibilities of the Pharmacy Act of 1868 had not by any means been exhausted. The Council had not taken proper test cases, and had not used the Act as it should against company pharmacy. The Poisons Committee had been instituted by people who had a personal interest in free trade in poisons, and danger was involved in the attempt to get a third part of the Poisons Schedule. The dispensing of medicines should be restricted to properly qualified persons, and the writers of prescriptions ought to cease making up their own medicines. The work of the Chemists' Defence Association was, finally, dealt with at some length, and the speaker concluded by expressing a hope that the members of the local association would derive much benefit from their connection therewith.

Mr. John Smith proposed a vote of thanks to Mr. Glyn-Jones, and spoke in appreciative terms of his address, particularly that part of it in which he advocated thorough organisation of all registered chemists and druggists.

Mr. Vint seconded the vote of thanks, which was also supported by Mr. Sidney Smith

Mr. Glyn-Jones responded with another long speech, concluding by proposing a vote of thanks to the Chairman, who subsequently supplied the members and visitors with refreshments.

WAKEFIELD CHEMISTS' ASSOCIATION.

The first annual general meeting of the Wakefield and District Chemists' Association was held on Tuesday evening, February 18, at the Victoria Temperance Hotel. Rules were adopted, and the following officials elected for the ensuing year:—President, Mr. W. Pollard, Wakefield; Vice-President, Mr. W. R. Maud, Pontefract; Hon. Secretary and Treasurer, Mr. J. Judge, Wakefield; Committee, Messrs. J. H. Chaplin, T. C. Whaley, A. Green, and C. W. Duffin. The future meetings of the Association will be held on the first Tuesday evenings in the month. A resolution of sympathy was passed with the widow and family of the late Mr. Martindale.

POISONING CASES AND INQUESTS.

Sulphonal.—At Bournemouth, on February 18, the Borough Coroner (Dr. A. Kinsey-Morgan) held an inquiry into the circumstances attending the sudden death of Mrs. Julia Charlotte Power, aged 53, a doctor's wife, who had come from Brixton for the benefit of her health. Deceased had been in a state of melancholia for eight years, and was unhappy because she was not allowed to go home. She had been in the habit of taking sulphonal because of insomnia, and it was stated that she had been supplied locally with a bottle containing twenty-five sulphonal tablets each week, while she had received by post four days before her death a larger bottle, which contained 100 tablets. Apparently they had all been taken, as the bottle was empty, and it was suggested that the deceased took eighty of the tablets in one night. A post-mortem examination practically revealed nothing, the tablets having apparently been dissolved by hot water, but death was attributed by a medical man to the taking of an overdose of sulphonal and to syncope.—The Coroner, commenting upon the case, said that in all probability deceased had been addicted to this habit for years, and he thought it a pity that there should be freedom of access, for self-treatment, to such a drug. This occurrence would doubtless be a lesson to others who looked upon sulphonal as a harmless remedy. There was no blame attachable to the chemist who supplied the tablets, and if there was any fault it lay with the Pharmaceutical Society, which might now, after becoming acquainted with that case, think it necessary to schedule sulphonal and some other remedies which were in the market.—The jury returned a verdict of "death by misadventure, through taking an overdose of sulphonal."

Liniment.—An inquest was held at Ending on Saturday, February 8, concerning the death of Mary Hartley (59), wife of a quarryman, of Healey. The evidence showed that deceased had been in the habit of taking laudanum for sleeplessness, and had accidentally taken some liniment instead. The bottle was labelled "poison." A verdict in accordance with the evidence was returned, and a juror remarked that the case called up again the question of special bottles for poisons.

Sleeping Draught.—An inquest was held on February 19 at Hartlepool concerning the death of Michael Snowdon, pilot. It was stated that deceased obtained a sleeping draught from Dr. McGill, saying he was to take a ship out in the morning, and wanted to have a good sleep. The next morning he was found dead, and, as the bottle was found empty, it was supposed that he had taken the whole of the contents, which represented four doses. A verdict was returned that death was due to misadventure.

Laudanum.—An inquest was held at Walsall on February 19 concerning the death of Harvey Loveridge (42), a single man, residing in apartments in Westbourne Road, Walsall. The evidence showed that deceased had suffered from toothache and neuralgia. He had been in the habit of taking laudanum to relieve the pain, and on the previous Tuesday he was found dead in bed, the cause of death being an overdose of laudanum. A verdict of "death from misadventure" was returned.

Chlorodyne.—On February 10 an inquest was held at Dover on the body of John Grant (32), chief engineer of the s.s. "Luciline." According to the evidence, deceased had suffered from a cold, and on Sunday, February 9, was found dead in his room on board ship, a bottle containing Collis Browne's chlorodyne being on a rack close to his head. It was stated that ships' engineers frequently used chlorodyne because they suffered very often from spasms and gripes through drinking too much water.—Dr. J. Baird, who was called on board to see deceased, having stated that in his opinion death was caused by an overdose of chlorodyne, a verdict of accidental death was returned.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

BASES IN SCOTTISH SHALE OIL. F. C. Garrett and J. A. Smythe have isolated and identified the following bases in the portion of Broxburn shale oil, boiling below 164°:—Pyridine, b.p., 115°-116° (in very small quantity); *α*-picoline, b.p., 129·5° (bar., 763 Mm.); *αγ*-dimethyl pyridine, b.p., 159°-159·5°; *αβ'*-dimethyl pyridine, b.p., 154°-155°; *αα'*-dimethyl pyridine, b.p., 142·5° (bar. 760 Mm.); *αγα'*-trimethyl pyridine, b.p., 170·5 (bar. 760 Mm.). *αβ'*-dimethyl pyridine is a colourless liquid with a strong pyridine-like odour; it gives a picrate, m.p., 151°-152°; a gold compound, m.p., 156°-157°; a platinichloride containing two molecules of water and melting (when anhydrous) at 238° with decomposition; and a mercuricloride ($C_7H_9,HCl,6HgCl_2$) in a very small, heavy crystals, m.p., 163°.—*Proc. Chem. Soc.*, **18,** 47.

IODO-TANNIN PREPARATIONS. O. Van Schoor has experimented with several of the published formulæ for iodo-tannin preparations, and in a preliminary note states the following conclusions which he has been able to arrive at:—Iodine combines with tannin in definite proportions: the combination is effected slowly at ordinary temperatures, being accelerated by the application of heat. The presence of sugar assists the disappearance of the iodine: alcohol seems to retard the reaction. It is necessary to use perfectly pure iodine. The kind of tannin also influences the product. The following formulæ are provisionally proposed:—*Iodo-tannin Syrup.*—Iodine, 2; tannic acid, 2; alcohol, 20; distilled water, 20; simple syrup, 1,000. Dissolve the iodine in the alcohol, and the tannin in the water; mix; add the syrup; warm in a stoppered vessel; when there is no longer any reaction with starch, filter; if necessary add sufficient distilled water to produce 1 kilo of syrup. *Iodo-tannin Wine.*—Take iodine, 1·50; tannin, 1·50; alcohol, 15; sweet wine, 1,000. Prepare in the same manner as directed for the syrup. —*Journ. de Pharm. d'Anvers*, **58, 1.**

IMMERSION OF LEAD IN DISTILLED WATER. F. Clowes finds that when very pure lead is immersed in ordinary distilled water much of the lead passes into solution, most probably as hydroxide, and is removable to a large extent from the solution by filtration through paper, from which it can again be entirely extracted by cold acetic acid. The compound of lead which remains undissolved by the water was found to have the formula $3PbCO_3,PbH_2O_2$. Oxygen in solution was proved to be the principal and primary agent in causing changes in the lead, and that carbon dioxide exerts a restraining action in proportion to the volume present. It was also found that carbon dioxide acted similarly in preventing the solution of litharge. The first action of aërated water apparently consists in oxidation and formation of hydroxide, which is then precipitated as hydroxy-carbonate by the carbon dioxide. The action is prevented or retarded by the presence of carbon dioxide in the initial stages. Total immersion of the lead also retards the action in presence of air, although the final result is the same whether the lead be wholly or only partially immersed in the water. Of the substances which prevent this action, sulphuric acid and soluble sulphates are most effective soluble carbonates are less so, whilst calcium hydroxide is still less so, but when present in larger quantity actually promotes the action.—*Proc. Chem. Soc.*, **18,** 46.

LYSOFORM. Simon has experimented on this substance, which is a combination of lysol with formaldehyde. Its employment in vaginal douches, in 1 to 2 per cent. solution, is strongly advocated. If the water is chalky, the solution is cloudy. By using an injection of 10 to 30 grammes of a 1 or 2 per cent. solution in certain bladder affections altogether remarkable therapeutic results were obtained, even in obstinate cases. Urethral douches with a 1 per cent. solution are indicated in chronic urethritis.—*Allg. med. Central-Ztg.*, through *Bulletin Générale de Therap.*, **24,** 942.

ADULTERATION OF VANILLA. M. H. Lecomte points out the possibility of making inferior or exhausted vanilla look like the genuine article by means of crystals of benzoic acid giving an artificial frosted appearance which is sometimes regarded as being characteristic of a sample of good quality. To ascertain whether the crystals are vanillin or benzoic acid the following simple test is proposed; a small quantity of alcoholic solution of phloroglucin is placed in a watch glass and an equal volume of hydrochloric acid added. A crystal of the suspected substance is then added by the aid of a needle, when a magnificent red coloration is produced if it is vanillin, whilst no colour appears if the crystals consist of benzoic acid.—*Journ. Suisse de Chim. et Pharm.*, **40,** 30.

DETERMINATION OF DIGESTIVE ACTION. F. Thomas and W. Weber employ dry casein, instead of egg albumin, moist milk-casein, and fibrin for determining the comparative digestive power of various enzymes. For pancreatic ferments a neutral solution of casein, obtained by dissolving dry casein, 5 Gm., in water, 250 C.c., containing 4 C.c. of N/10 NaOH solution. The pancreatic material is digested with this at 40° C. for one hour, after which time the unattacked casein is precipitated with saturated sodium sulphate solution in the presence of excess of sulphuric acid. The casein thus thrown out is in a granular condition, which readily lends itself to collection and washing. It is then dried and weighed. For papain, the solution of casein should be made, distinctly alkaline, and for pepsin free HCl in the proportion of 0·1 per cent. should be present, and a temperature of 38°-39° C. employed. For the above quantity of casein the equivalent of 0·1 Gm. of pancreatin or 0·25 Gm. of pepsin should be used.—*Pharm. Zeit.*, **46,** 936.

ADULTERATED OIL OF TURPENTINE. A. and P. Androuard call attention to the prevalent use of a specially prepared American petroleum in the adulteration of oil of turpentine; six out of nine samples recently examined being found to be thus sophisticated. The hydrocarbon oil is specially exported from the United States for the purpose under the name "white spirit." It is a colourless liquid with a bluish-violet fluorescence, its sp. gr. at 15° C. is 0·807, compared with 0·871 for pure oil of turpentine; consequently admixture of this adulterant is shown by a lowered specific gravity. Its rotation is also very low, −1·2 for 200 Mm., so that the rotation of the adulterated specimens is correspondingly lowered. The residue left on distillation is also very high, 42 per cent. at 205° C.; pure oil of turpentine only gives 6 per cent. of non-volatile matter at this temperature. The fraud is therefore easy of detection. Adulterated samples were found to range in sp. gr. from 0·860 to 0·867; in rotation from −52·2° to −57·0°, and gave residues on distillation at 205° C. of from 16 to 25 per cent.—*Journ. Pharm. Chim.* [6], **15,** 99.

THE PROPOSED MARTINDALE MEMORIAL.

On Tuesday, March 4, a meeting was held in the Council Room, at the Pharmaceutical Society's London house, to consider the subject of a Martindale memorial. The **President**, Mr. G. T. W. Newsholme, took the chair, and there was a representative attendance, including the Vice-President, Mr. C. B. Allen, Messrs. S. R. Atkins, I. Bourdas, R. Bremridge, E. N. Butt, M. Carteighe, A. Cooper, O. Corder, A. F. Flack, R. L. Gifford, W. S. Glyn-Jones, F. C. Goodall, W. F. Gulliver (President of the Western Chemists' Association), W. L. Howie, J. Humphrey, T. Maben, P. MacEwan, A. E. Marsh, W. A. H. Naylor, W. J. I. Philp, D. Storrar, C. Symes, G. S. Taylor, J. C. Umney, W. P. Want, W. Warren, S. J. Weston, S. W. Woolley, A. C. Wootton, and others.

The **President** said the meeting had been called in pursuance of a suggestion made in the *Pharmaceutical Journal* of February 22 last, to consider the desirability of having some memorial of their late friend, Mr. William Martindale. He was glad to see present several representative men in pharmacy, and he thought they were all of one opinion that the memory of their distinguished colleague should be commemorated in some way. That meeting had been called in the first place as a more or less informal meeting, and he took it that those present were prepared to make some suggestions. Certain suggestions had already been made in the Journal as to what form the memorial should take. There were many ways in which the object of the meeting could be attained, but one of the most important factors was the question of money. Of course he did not mean to say that a very large sum of money would be required, or that a considerable amount could not be raised by private subscription, but he thought the memorial should be representative of the whole of the chemists of the country. Therefore, it would be very much better to have a moderate amount of money subscribed by all rather than that large sums should be subscribed by a few individual persons. However, he would be pleased to hear suggestions from any person present.

A general conversation followed, in the course of which reference was made to the suggestions made in the Journal a fortnight ago, one of which was that a marble bust of Mr. Martindale should be placed in the Examination Hall at Bloomsbury Square.

Mr. **MacEwan** reminded the meeting that a bust of Mr. Martindale was exhibited in the Academy last year by Mr. Taubman. He knew that Mr. Martindale had an extremely high opinion of that bust, and as it was a very good portrait, he suggested that a replica in marble be prepared. As the work was done by a man who was on the Register, he thought it would be very appropriate to have a replica of the bust in the Society's house.

Mr. G. S. **Taylor** said the bust was still in existence, and Mrs. Martindale had expressed her willingness to lend it. The difficulty in regard to a portrait of Mr. Martindale was that no artist was personally acquainted with him. He had been to see Mr. Taubman, and he was of opinion that a replica of the bust in marble could be produced for about £150—a sum which should not be difficult to get.

Mr. **Carteighe** having expressed his approval of the idea of a marble bust, proposed that one be procured. This was seconded by Mr. MacEwan, after which

Mr. J. C. **Umney** suggested that the Society's silver medal, which is awarded annually, should be re-named the Martindale Medal, to be awarded for practical pharmacy, together with a gift of books on pharmacy. Thus there would be a Pereira Medal for botany, chemistry, and materia medica, and a Martindale Medal for pharmacy.

Mr. W. F. **Gulliver** did not like the idea of re-naming the Society's silver medal. He would rather that a new medal for pharmacy be given, as suggested in the *Pharmaceutical Journal*, by Mr. R. Wright, of Buxton, together with a gift of books.

Mr. **Carteighe** pointed out that an endowment of at least £250 would be required for £5 worth of books, while a die for a new medal would cost £50. He spoke about money rather deliberately, because he knew that Mr. Martindale would be the last person to wish a memorial to be founded otherwise than by voluntary subscription. Still, he thought the case might be met by making his motion the basis for appointing a committee, and if the response was sufficiently large to enable the Committee to suggest an additional memorial, the form it should take could be decided by a subsequent meeting of subscribers.

The **President** supported Mr. Carteighe's proposal. He said he had given a good deal of consideration to the matter, and at one time he thought that a scholarship would be very appropriate, but he gave up that idea because he did not think sufficient money would be subscribed. Then the suggestion presented itself whether it might not be desirable to supplement the Redwood Scholarship, but that, he thought, would not be complimentary to the memory of Mr. Martindale.

Eventually, after a long conversation, in which Messrs. Carteighe, Butt, Allen, Umney, Bourdas, Atkins, Cooper, and MacEwan took part, it was proposed by Mr. **Carteighe**, and seconded by Mr. **MacEwan**, that

> With the view of perpetuating the memory of the late Mr. Martindale, a past-President of this Society, it is desirable that steps be taken to procure a bust of our late deceased friend, to be placed in the house of this Society, and in the event of the response being satisfactory, a medal or some other encouragement for the advancement of pharmacy be provided, the exact nature of which shall be determined at a subsequent meeting of subscribers.

A short discussion then took place as to whether the bust should be in bronze or marble, Mr. **MacEwan** remarking that as Mr. Martindale had preferred the bust of himself in clay, it might be that marble would give a still better result.

The motion was carried unanimously, it being decided to leave the question of material for further consideration.

It was also decided, on the motion of Mr. **Bourdas**, seconded by Mr. **Atkins**, that the amount of the subscription should not exceed £2 2s.

The following gentlemen were then appointed to act as a

Committee.

Mr. G. T. W. Newsholme, President of the Pharmaceutical Society.
Mr. C. B. Allen, Vice-President of the Pharmaceutical Society.

Atkins, S. R.
Boa, Peter
Bremridge, R.
Carteighe, M. (Treasurer)
Cooper, A.
Gulliver, W. F.
Howie, W. L.
Naylor, W. A. H.
Philp, W. J. I.
Storrar, D.
Taylor, G. S. (Secretary)
Umney, J. C.

The **President** pointed out that the Committee was thoroughly representative, including officials and members of the Pharmaceutical Society, the British Pharmaceutical Conference, the Western Chemists' Association, and the North British Branch Executive.

Preliminary List of Subscriptions.

	£	s.	d.
G. T. W. Newsholme	2	2	0
S. R. Atkins	2	2	0
Chas. B. Allen	2	2	0
W. J. Ignatius Philp	2	2	0
W. Fred. Gulliver	2	2	0
Charles Umney	2	2	0
John C. Umney	2	2	0
H. C. Wright	2	2	0
Ernest A. Umney	1	1	0
W. A. H. Naylor	2	2	0
John Humphrey	1	1	0
Peter MacEwan	1	1	0
Thos. Maben	1	1	0
W. Phillip Want	2	2	0
S. J. Weston	1	1	0

	£	s.	d.
Wm. Warren	2	2	0
J. Storrar	1	1	0
W. L. Howie	2	2	0
Albert Cooper	1	1	0
A. J. Bullen Cooper	1	1	0
H. Creemer Cooper	1	1	0
E. R. Marsh	1	1	0
I. Bourdas	2	2	0
I. Bourdas, jun.	2	2	0
M. Carteighe	2	2	0
E. N. Butt	2	2	0
A. C. Wootton	1	1	0
George S. Taylor	1	1	0
Dr. C. Symes	1	1	0
W. S. Glyn-Jones	1	1	0
R. Bremridge	2	2	0
Proprietors of the *Chemist and Druggist*	2	2	0
J. Rymer Young	1	1	0
E. M. Holmes	1	1	0
Professor H. G. Greenish	1	1	0

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

MEETING OF THE COUNCIL.

WEDNESDAY, MARCH 5, 1902.

Present:—

Mr. G. T. W. Newsholme, President;

Mr. C. B. Allen, Vice-President;

Messrs. Atkins, Carteighe, Cooper, Corder, Cross, Gifford, Glyn-Jones, Harrington, Hills, Savory, Southall, Storrar, Symes, Taylor, Wootton, and Young.

The minutes of the previous meeting having been read and confirmed,

The President said he had received a letter from Mr. Harrison, who although recovering from the effects of the accident sustained whilst in London for the previous Council meeting, was still unable to travel any great distance. Mr. Park also wrote to say that he would not be able to be present. He (the President) had received a letter from Mrs. Martindale expressing the thanks of herself and family to the Council for the resolution of condolence and sympathy passed at the last meeting, and a letter had been received from the Secretary of the Wakefield Chemists' Association enclosing a resolution placing on record the sympathy of the Association with Mrs. Martindale and her family, and with the members of Council.

The President having announced that the first business was the

Election of a Member of Council,

Mr. Walter Hills proposed that Mr. Richard Atkinson Robinson, of 195, Brompton Road, S.W., be appointed a member of Council to fill the vacancy caused by the death of Mr. Martindale. It was not necessary for him to recommend Mr. Robinson to the notice of members of that Council, and he was probably as well known to pharmacists generally as anyone. He was a loyal member of the Society who had exceptional powers of debate, a wide experience of public business, and personal acquaintance with public officials in London and elsewhere. He thought there was every reason why Mr. Robinson should be appointed to the Council, and he felt sure that if he was he would add great weight to the Council, and be of considerable service in carrying out its work.

Mr. Corder seconded the motion, which was carried unanimously.

Election of Members.

The following persons, having tendered their subscriptions for the current year, were elected "Members" of the Society:—

Bell, Henry Robert K.; Haltwhistle
Black, Thomas Kennedy; Hawick
Cattell, Thomas B.; Sutton Coldfield
Corry, Edward Samuel; Johannesburg
Crowden, Francis; Penrith
Dobson, Ernest John; Holloway
Forbes, Walter; Forest Gate
Grant, Peter; Hull
Gregory, George Henry; Scarborough
Harris, John; Exeter
Higgins, Frederick S.; Stevenage
Hughes, Daniel; Mold
Hyde, James Edwin; Tonbridge
Jackson, Robert Ernest; Dartford
Johnson, Herbert; London
Maclachlan, Hugh; East Dereham
Marsden, Charles E.; Stocksbridge
Millar, Alexander Hastie; Kilburn
Neathercoat, Ernest Tom; Ely
Paterson, A. G. C.; Scarborough
Phelps, Alfred H.; Hucknall Torkard
Reed, William; Newcastle-on-Tyne
Ross, David; Aberdeen
Stocks, A. B.; Newcastle-on-Tyne
Thomas, Penry Sidney; Kennington
Walburn, A. W.; West Hartlepool
Waters, Joseph; Darlington
West, David Buchan; Beith
Westlake, Ethel Maude; Oxford
Wilkie, Peter Marshall; Govan
Willox, Leonard Stephen; London
Wing, William; Sheffield

Election of Student-Associates.

The following persons, having tendered their subscriptions for the current year, were elected "Student-Associates" of the Society:—

Bembridge, Charles H.; Alfreton
Bott, Edith Beilby; London
Carter, Arthur; Tamworth
Davies, John; Llanfarian
Evans, John William; Rhuddlan
Farmer, David F.; Kirkcaldy
Kemp, Joseph A.; Glasgow
Shapley, James Bernard; Torquay
Sholl, John Paul C.; Penzance
Spicer, William Scutt; Wareham
Wiles, Henry; Haslemere
Willoughby, George E.; Carn Bre
Wilson, William Douglas; London

Several persons were restored to membership upon payment of the current year's subscription.

Finance Committee.

The report of this Committee included the following figures:

Balance in February	£1,172	0	0
Receipts	2,949	0	0
	4,121	0	0
Payments during February	2,383	0	0
	£1,738	0	0

Payments to the amount of £2,568 0s. 0d. for the current month were recommended.

The President said there was only one item in the report which he would like to refer to, and that was the announcement of the receipt of a legacy of £100 to the Benevolent Fund from the late Mr. E. M. Burden, of Duke Street, Grosvenor Square, who died in October, 1900. Mr. Burden was a very old supporter of the Society, and was one of the most respected of the early members, whose labours resulted in the passing of the 1852 Pharmacy Act, and in putting down a firm foundation upon which to build further legislation. He carried on a high-class pharmaceutical business in Duke Street for more than fifty years, and met with a considerable measure of success in the course of his professional career. In that success he did not forget his less fortunate brethren, but contributed liberally to the Benevolent Fund, in the development of the work of which he manifested an undiminished interest till the close of his life. The legacy now paid was, therefore, characteristic of the deceased gentlemen and of his life long loyalty to the corporate body in which he was a worker. Mr. Burden's brother, who sent the legacy, was a member of the firm of Burden and Milnes, architects, 333, Oxford Street, W.

The report was adopted.

Bell Scholars.

The Treasurer was authorised to pay the Bell scholars the sum of £15 each, being the second moiety of the scholarship.

Benevolent Fund Committee.

The report of this Committee included a recommendation of grants to the amount of £43 in the following cases:—

Widow of a member and subscriber (72). Has had previous grants. (Doncaster.)

Registered chemist and druggist (60). Has had previous grant. (Old Kent Road, S.E.)

Registered chemist and druggist (33). Suffering from a lung affection. Has had previous grant. (Luton).

Two cases were deferred for further consideration, and one was not entertained.

This report having been discussed in committee, was adopted, on the motion of the Vice-President.

Library, Museum, School, and House Committee.

The Library, Museum, School and House Committee met on February 18, 1902. The usual monthly statements respecting the Society's Libraries and Museums in London and in Edinburgh were received, and particulars of these statements are published in the *Pharmaceutical Journal* for February 22, 1902.

The Committee dealt with various administrative matters relating to the superintendence of the School and House, and the proper and efficient conduct of the other departments of the Society, under the charge of the Committee.

The School Staff reported. One student was permitted, for sufficient causes, to postpone the continuance of the elementary course of study until next session.

The Committee considered a communication from the Cardiff and District Pharmaceutical Association in reference to an arrangement for providing University courses for local pharmaceutical students. After careful consideration the Committee does not see its way to recommend the Council to give the guarantee asked for by the Association.

A letter was read from Mr. R. L. Gifford complaining of the inadequacy of the reports of the Library Committee. The Committee, in reply, desires to point out that its proceedings are administrative, and consist largely of conferences between the Committee and the Officers of the Society, and that it is not deemed necessary or advisable to publish the details of its proceedings.

The Journal Sub-Committee reported that it had conferred with the Editor on matters of detail connected with the production of the Journal, and that a conference had also taken place between the Editor, the Advertising Agents, and the Secretary, in accordance with the scheme laid down for the proper conduct of the business of the Journal.

The Committee sat as a Research Committee, and received reports from Professors Collie and Greenish.

The PRESIDENT moved that the report be adopted.

Dr. SYMES, referring to the special issue of the *Pharmaceutical Journal*, published on February 22 last, said that originally that number of the Journal was published with a view to helping the Benevolent Fund, and it contained a list of the subscribers, the idea being that persons in any particular district who received the Journal not finding their names in the list together with the names of fellow townsmen who did subscribe might be induced to subscribe also. That list had not been printed for several years, so that at present chemists had no means of knowing, except by the 'Calendar,' who subscribes and who does not. He would like to know if there was any special reason why a departure had been made from the original intention in regard to that special number of the Journal.

Mr. GIFFORD said he was very sorry to have to say that he could not express his satisfaction with the reply that the Library Committee had given him. The Committee said it was not deemed advisable to publish details of the Committee's work. Surely the details were not so exhaustive that no information could be given. His idea of a report was that he ought to be able to gather some information from it, and he had to repeat that he could not obtain any information from the report before the Council. In the report of the Journal Sub-Committee there was either too much stated or too little. If it was necessary to tell the Council that a meeting had been held in accordance with some scheme, of which the Council had no knowledge, he thought some information should be given as to what the scheme was. Then in the matter of the Research Committee and the reports from Professors Collie and Greenish, could the report not go a little further?

The PRESIDENT, replying to Dr. Symes, said it was a good many years since the list of subscribers to the Benevolent Fund was last published in the Journal; consequently, he, not being President at the time, had no knowledge as to the reason for discontinuing its publication. Perhaps Mr. Carteighe could inform them on the point?

Mr. CARTEIGHE said it was considered by the Committee that the cost of publishing the list was so considerable that instead of gaining by its publication, money was lost; therefore, from the point of view of benevolence, it failed to carry out the purpose which it was intended to serve. But the great advantage of the special number was that it considerably assisted the Registrar in the rectification of the Register.

Dr. SYMES said he was sorry the publication of the list had been a failure, as he was responsible for it being produced.

Mr. HILLS was sorry that Mr. Gifford was not satisfied. He understood him to say that he gathered no information from the report, but he thought Mr. Gifford would find some information in the third paragraph. The Committee was a very large one, and its work was of such a character that it was impossible to publish full details.

Mr. WOOTTON, while recognising that there were a great many matters which were dealt with by the Committee that it would be unwise to publish details of, sympathised with Mr. Gifford. He was very sorry that the members of the Committee said they would not give any further information. He thought more information should be given concerning the work done in the Research Laboratory.

Mr. GLYN-JONES, as being to some extent responsible for the report being presented in its present form, said he had every sympathy with members of Council who desired fuller information concerning matters which come before the Committee, but having regard to the statement made by the President at the last meeting of the Council, that every member of Council was at liberty to inspect the minute books, he did not think there was much in Mr. Gifford's objection.

Mr. GIFFORD said he looked at the matter from the point of view of the country members of the Society, who had a right to know what was done.

Mr. ATKINS and Mr. COOPER, as members of the Committee, assured Mr. Gifford that every attention was given to the interests of members in the country, and that nothing was done that would not bear the strictest investigation.

Mr. TAYLOR expressed surprise that any member of the Council should have had any doubt as to his constitional position. Each member of Council had a perfect right to inquire into and to see the minutes of any of the committees, but to spread the detailed information contained therein broadcast might be found to be a very unwise proceeding. Members of Council were elected to act on behalf of members of the Society as a safeguard, and he personally should not hesitate, if occasion arose, to exercise his constitutional right as a member of the Council.

The PRESIDENT, referring to Dr. Symes' remarks concerning the list of subscribers to the Benevolent Fund, said the publication of the list cut two ways. Some persons might be induced to subscribe because they saw the names of fellow townsmen in the list; on the other hand some might be prepared to subscribe £1 1s., but seeing their neighbour down for £2 2s., would not give at all. As a matter of fact, the funds had increased since the list was discontinued. That was probably due to the personal interest now taken in the matter by the Society's local officers; and, to his mind, it was much better that the local officers should interest themselves in the matter than that the list should be published. With regard to Mr. Gifford's remarks, he need not reply to them, as other speakers had replied to the points raised, but he would like to ask Mr. Gifford if he would like a report of the work done by the General Purposes Committee to be published. He did not think that he would. With regard to Mr. Wootton's reference to the Research Laboratory, he would point out that they were constantly receiving reports of the work done there, in the form of papers read at evening meetings of the Society and in other ways, so that to bring those details before the Council would simply be to waste time. Mr. Wootton said the Committee would not give the information desired. That was not the case. It was because the Committee does not think it is wise to publish the information asked for. In regard to the special number of the Journal, he might say that he had reason to believe that particular issue would be a success.

The report was then adopted.

Dispensers' Committee.

The **President** said this Committee had met on several occasions, and it was now proposed to issue an interim report. As members of the Council were aware, the Committee had been a long time in bringing a report forward, but that was not the Committee's fault, the fact being that a great deal of work had to be done by the Vice-President and Mr. Glyn-Jones, and they had not been able to bring the matter forward earlier.

The **Secretary** then read the following interim report, embodying a summary of the whole of the material collected at present:—

ENQUIRY ON DISPENSING IN PUBLIC INSTITUTIONS.

Summary of Results.

Institutions Reviewed, 716.	Cases in which Dispensers are Appointed.								Cases in which Dispensers are Not Appointed.				Cases in which Information was Insufficient for Classification. 22.
	Pharmacy Act Qualification.		Apothecaries' Hall.		Army Compounder.		No Qualification.		Dispensing Performed Under Medical Responsibility.		Dispensing Performed by Local Chemists, etc.		
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	
	214	29·9	37	5·17	20	2·79	110	15·36	211	29·46	102	14·24	

Of the 381 institutions where dispensers are appointed, persons registered under the Pharmacy Act have been appointed in 214 instances—a percentage of 56·16; and of the 313 cases in which no regular dispenser is appointed the dispensing is performed under the responsibilty of a registered chemist and druggist in 102 instances (or 32·6 per cent.).

Adding the totals recorded under the heads "Pharmacy Act Qualification," "Medical Responsibility," and "Local Chemists," it is found that in 527 of the 694 dispensaries concerning which particulars have been tabulated—75·9 per cent.—the responsibility for the dispensing of medicines lies in competent hands.

A perusal in detail of the information collected by the Committee leads to an impression that, as a general rule, public authorities conducting or controlling hospitals, infirmaries, or dispensaries are fully aware of the importance of the work of compounding and dispensing of medicines, and are careful to protect the patients in such institutions by appointing dispensers who possess a statutory qualification; but in the case of a number of voluntarily supported institutions, with possibly the most urgent reasons for exercising a rigid economy, the protection of the patients from unqualified dispensers is apparently not regarded as a matter for primary consideration.

The Committee recommends that it be authorised to avail itself of the practical knowledge of certain dispensers in typical institutions, either by inviting the oral evidence of such persons, or requesting the formulation of written statements on specific points.

The Committee also recommends that this interim report be published in the *Pharmaceutical Journal*.

The **President**, in moving that the report be received and adopted, said he did not know that he need say much about it, as the figures spoke for themselves. He thought the Council would be pleased to find that dispensing at public institutions was done rather better than they had been led to believe. The report of the Committee was exceedingly valuable. The inquiry showed that some of the public bodies had begun to realise that it is a very important matter that dispensing should be done by qualified persons. He knew that in regard to Poor Law institutions the order that was issued some time ago, that certain regulations concerning the storage of poisonous liniments be observed, had had a very good effect indeed, and inquiries had been made as to the best means of complying with those regulations. The inquiry was responsible to some extent for the greater interest that had been taken in the matter of dispensing in public institutions, and he was quite sure that good would result.

Mr. **Southall** observed that several of the public bodies had not replied to the inquiries.

Mr. **Glyn-Jones** said Mr. Southall seemed to be under the impression that public institutions had been appealed to direct. That was not so. The work of collecting information had been done by the Society's Divisional Secretaries, and he had been greatly impressed by the efficient and valuable help that the Divisional Secretaries had given. He thought it showed a very satisfactory state of things so far as the Society's local organisation was concerned. Mr. Glyn-Jones went on to say that although not quite satisfied with the manner in which dispensing was carried out at certain institutions, the report showed a great deal better state of things than the Committee had anticipated. In the majority of cases where no qualified person was employed, it was scarcely correct to describe them as "public institutions." That term covered a good deal, and he did not know that they could find fault with institutions which could not be called in a true sense "public institutions" for not having carried the matter further than the general practice of medical men throughout the country. He only hoped that those who are responsible for public dispensing would see the importance of insisting that it is done properly.

Mr. **Wootton** remarked that no mention of Army compounders was made in the report. He would like to know whether it was not possible to get some evidence from the compounders who had returned from South Africa.

The **President** said the Committee had not lost sight of that, and inquiries were being made by Mr. Carteighe.

Mr. **Carteighe** said that for the time being the Army compounder question had been postponed. There had been a small committee of experts sitting to consider the reorganisation of the Army Medical Department, and he was requested to see those gentlemen, some of whom were personally known to him, to ascertain whether the subject came within the scope of their inquiry. He found that the inquiry was confined to purely medical matters connected with the war, but that further inquiry would subsequently be made into the subject of dispensing. The members of the committee, he said, had every sympathy with the objects of the Dispensers' Committee, and he had hopes that it might be possible to impress upon the Army Medical Committee that the Army compounders so called are not the safest persons to entrust with dispensing.

The **President** said he was reminded that a report on the subject of Army compounders had already been presented to the Committee.

Mr. **Wootton** thought there were many young men now in the country who would be able to give very valuable evidence concerning their experience of Army dispensing.

Mr. Carteighe said it was the intention of the Committee to put themselves in touch with certain persons with a view to carrying out what appeared to be in Mr. Wootton's mind.

Mr. Cross said the report showed that matters were not so bad as some people were inclined to think when the Committee was formed, and the fact that there was less of the evil than was supposed, would probably make it that the little there was to correct would be the more easily corrected. He would like to know what course the Council would take in the matter when the time came to deal with it, because it was one of those subjects that the chemists of the country were extremely interested in at present.

The Vice-President thanked the Council for the kind way in which it had overlooked the delay in presenting a report. He also supported what Mr. Glyn-Jones had said as to the efficient and prompt manner in which the Divisional Secretaries had responded to the questions submitted to them. He thought it was a matter for congratulation that 75 per cent. of the dispensing of medicines in public institutions was in competent hands. With regard to those dispensers and compounders who hold no qualification, he thought they were chiefly old servants who had been in the employ of Boards of Guardians for many years, and their numbers would decrease rapidly in the natural course of events. Therefore, too much must not be made of the fact that 15 per cent. of the dispensers in public institutions had no proper qualification.

Mr. Hills, as a member of the Dispensers' Committee, expressed his thanks to the Vice-President and Mr. Glyn-Jones for the work they had done.

Mr. Atkins said Mr. Cross had asked what would be the action of the Council in the matter. He thought members of Council might bring their personal influence to bear whenever a vacancy had to be filled by impressing upon local authorities the necessity of electing only qualified persons to the position of dispensers.

The report was then adopted.

Appointment of a Divisional Secretary.

The President moved, and it was carried, that Mr. Richard Mumford be appointed Divisional Secretary for Cardiff, in place of Mr. W. J. Sanders, who had been unable to continue in that position.

The Annual General Meeting.

On the motion of the President, it was resolved that the annual general meeting be held on Wednesday, May 28, at twelve o'clock. It was also resolved that the preparation of the annual report be referred to the Library, Museum, School, and House Committee.

Correspondence.

The President stated that a letter had been received from Mr. Harrison, Clerk to the Privy Council, announcing the appointment of Mr. Walter Hills as a member of the Poisons Committee.

The Secretary read a letter, dated February 27, 1902, from Mr. Hill, the Assistant-Secretary, concerning

PRELIMINARY EXAMINATION CERTIFICATES.

The letter stated that the Special Committee to whom this question had been remitted reported to the North British Branch Executive on Friday, February 21, and made the following recommendations:—

> The Committee suggest that candidates possessing Leaving Certificates be allowed to complete the Examination by passing the remainder of the subjects under any of the Examining Bodies recognised by the Society, always provided that the six subjects have been passed at not more than two Examinations.

This recommendation was agreed to by the Executive and ordered to be sent to the Council.

The President moved, Mr. Hills seconded, and it was carried, that the communication be referred to the Library Committee.

The Secretary then read a second letter from Mr. Hill, which was dated February 26, dealing with the

CARNEGIE TRUST AND PHARMACEUTICAL EDUCATION.

The letter stated that the following resolution was passed at the meeting of the North British Branch Executive, held in Edinburgh on Friday, February 21, and was ordered to be sent to the Council.

> The matter of a university training for pharmaceutical students and the institution of a Bachelor of Science degree in pharmacy in the Scotch universities having been brought forward by Mr. Tocher, at a conference of Scottish pharmacists, held here to-day, the meeting approved of the idea, and recommended it to the Executive. The Executive unanimously agreed to forward the scheme submitted by Mr. Tocher and the information collected by him to the Council for their information and consideration. In the meantime the Executive remit to the General Purposes Committee to co-operate with Mr. Tocher and his colleagues, Professor Bower and Dr. Dobbin, in any necessary steps for the further elaboration of the scheme.

Mr. Hill sent also the papers referred to in the resolution.

The President said the best course to follow would be to remit this communication to the Library Committee. It would be remembered that that Committee had had the question under consideration for some time, but since the last meeting the matter had advanced somewhat, so that the Committee would now probably be in a better position to consider the question.

Dr. Symes seconded the motion.

Mr. Storrar said that, personally, he should like the question to be discussed and considered by the whole Council, but he quite recognised the wisdom of remitting the matter to the Committee for consideration. Mr. Storrar then went on to sketch the history of the effort that is being made by Scottish pharmacists to participate in the benefits of the Carnegie Trust in regard to pharmaceutical education. In regard to the scheme that had been brought forward by Mr. Tocher at a recent meeting in Edinburgh, several objections had been made, outside the Council, to the course taken in Scotland. The objection had been made that the North British Branch Executive had taken upon itself more than it ought to have done in making inquiries into that scheme. But he took it to be a distinct advantage to the Society that there was such a body as the Executive, because schemes could be formulated and discussed by it without committing the Society in any way, and he was quite certain that in all the discussions that had taken place on the matter there had been no desire to do anything that was not loyal to the Society. Then in reference to a degree in pharmacy, it had been stated that it would interfere with the Major qualification. There was a good deal in that, but he must point out that the Society does not exist for the Major man. At the same time he did not think the degree would do the Major man any harm. Another objection that had been raised was that England might be subjected to a Scotch invasion of Bachelors in Pharmacy. He thought that might be an advantage. If those north of the Tweed could come south, there was nothing to prevent those south of the Tweed from going north to take the Scotch degree, and from the report of a meeting which was held recently in Manchester, he gathered that there is evidently a desire to establish a curriculum and a degree in pharmacy in connection with the English universities. He did hope that when the matter came up for discussion by the Council it would be carefully considered. This scheme should not be taken up and then dropped. It was a very elaborate one, but it would be useless to discuss the general details, because those must be fixed by the universities. He thought the Council was very much indebted to the gentlemen who had taken the trouble to prepare the scheme, and he thought the Council would support them so far as to see that it was exceedingly desirable that pharmaceutical education should be connected with the universities.

Mr. **Glyn-Jones** strongly objected to the position apparently taken up by the North British Branch Executive in the matter, and the remarks made by Mr. Storrar had only strengthened him in his opinion. A pamphlet explaining the scheme had been sent to the Faculties of Science of the Universities of Scotland, and he would like to know where it emanated from. The document began—

> We beg to submit herewith for your consideration a scheme having for its objects the establishment of pharmaceutical education in Scotland on a firm and lasting basis, and the institution of a decree of Bachelor of Science in pharmacy, to be open only to registered chemists and druggists. The general purposes of the scheme have been approved of officially in Scotland by the Executive of the North British Branch of the Pharmaceutical Society, and by the Society's Board of Examiners for Scotland.

Then the "promoters of the scheme submit two alternative entrance examinations for consideration. But there was no explanation as to who the promoters were, and if he was an outsider, the natural conclusion would be that it was being promoted by the Pharmaceutical Society. When the matter came before the Committee, he hoped they would recognise its importance; for in this pamphlet some one had stated that the Society's examiners in Scotland had approved of the examinations being conducted by persons outside the Society, the statement being made that:—

> It is the view of many prominent members of the Pharmaceutical Society that the universities ought, at an early date, to be asked to conduct the Examinations in Chemistry and Botany for the Pharmaceutical Society, the students coming up at a later period for examination by the Society on the technical subjects—Materia Medica and the various branches of Pharmacy.

That was a serious statement to make in any document, and he certainly had never heard any officer of the Society say that the time had come when part of the Minor Examination should be conducted by outside bodies. Therefore, he thought it was important for the Committee to know from whom the document under notice emanated, particularly as it was said to be "approved of officially." There were some very important questions involved in that document which affected the interests of chemists throughout the whole of Great Britain and the interests of members of the Society. Hence, he hoped that nothing further would be done till the Society had had an opportunity of expressing its views on the matter. But, if he rightly understood the last paragraph in the document "the scheme will be officially laid before the universities of Scotland for their consideration" as soon as it has been revised by the Science Faculties and certain revisions that may be deemed necessary have been made by the pharmacists in Scotland.

Mr. **Storrar** said nothing could be "officially" done without the sanction of the Council.

Mr. **Glyn-Jones**: Then I do not understand the last paragraph, which states that

> After revision by the Science Faculties and any revision deemed necessary by the pharmacists in Scotland, when the scheme is made public . . . . . . the scheme will be officially laid before the universities of Scotland for their consideration.

He thought it was a pity that the matter had gone as far as it had without the Council being consulted. Mr. Storrar had said that the Council knew what was being done, but all that he (Mr. Glyn-Jones) could say was that they were only told that a scheme was being considered.

The **President** said no useful purpose would be served by discussing the matter further until the Committee had considered the scheme.

The matter was remitted to the Library Committee, and on the motion of Mr. **Carteighe**, Mr. Storrar was added to the Committee.

The Council then resolved itself into the General Purposes Committee, and the public business terminated.

POISONING CASES AND INQUESTS.

Supposed Poisonous Sweets.—An inquest was held at Cramlington Village on February 26 concerning the death of John Bruce (3), the son of a miner. According to the evidence, deceased had purchased a halfpenny worth of sweets at a small shop in the village and had eaten four of them—two yellow and two maroon coloured. Subsequently he was taken ill and died. A post-mortem examination revealed slight irritation of the stomach and bowels, all the organs being healthy.—The jury found that deceased died from the effects of an irritant poison probably contained in the sweets.

Laudanum.—On Thursday, February 27, an inquest was held at Accrington concerning the death of Dr. James Nield Cooper, who was found dead in his surgery the previous day. It was stated that the deceased had been drinking heavily for about a week, and at such times was in the habit of taking sleeping draughts.—Dr. McDonald attributed death to opium poisoning. The jury returned a verdict of accidental death from an overdose of opium taken while suffering from the effects of drink.

LETTERS TO THE EDITOR.

The Publication of Reports

I have noticed the last few weeks what I am afraid indicates a retrograde movement in the management of our Journal, and it is as one of the proprietors that I ask for a little space in your next issue. The last two meetings of our local association, which are held on a Tuesday, have been reported fully in the issues of the trade papers the following Friday, whilst in the Journal they are relegated to a small space in the Supplement, and given a full report the following week, or nearly a fortnight after the event. It is not because these are our meetings that I write, because the same remark applies to other items, to which is appended a note to the effect that "a full report will appear next week." The reports are all sent off together, and should be as fully reported in the Journal as in the other papers the same week, if they are worth a full report at all. The result of this holding over must be that the members of the Society will look upon the Journal as a week behind the fair, and, consequently, they will neglect to read it, depending on other papers for their news, instead of turning to the Journal first and knowing that from its pages they will be kept in touch with current topics. Again, if the matter is held over, it must crowd out the following week's news in the next issue, and so you go on *ad infinitum*. We have been given to understand that the Council wishes to foster local organisation. Is this one of the methods of doing so? Is it not a fact that what one association does stimulates others to do as well, or better? I think it is, and therefore the better reports we have the more our local associations will grow. I can only see one reason for this action, and that is, that it is with the object of keeping down expense. It is a piece of cheese-paring to which I do not think the members of the Society would agree. The Journal must cost something, and I think very few members would object to its costing the Society a few coppers per member per annum more if it was made more complete. The more it is read the more valuable it will eventually become as an advertising medium and the Society be recouped. We must not forget that it is, after all, the only tangible return which many members get for their guineas, and, therefore, they have a right to something first-class and as good as money can make it. I hope the committee which has charge of the Journal may try a more liberal and forward policy with the Journal, and make it what it should be, the place where a pharmacist may look for and find anything worth knowing that is going on in the pharmaceutical world.

Bradford, March 4, 1902 Alfred H. Waddington,
Divisional Secretary, Central Bradford.

Mandl's Solution.

May I be permitted to supplement the information given by your various correspondents in reference to the above solution? As handed in to us by our throat specialist some five or six years ago, there were three strengths, called Mandl's Solution Nos. 1, 2, and 3, respectively. The formula for No. 1 Solution was :—

℞ Iodi. .... gr. 6¼.
Pot. iodid. .... gr. xii.
Ol. menth. pip. .... mii.
Glycerin .. ..ad ℥i.
Misce.

No. 2 Solution was double the strength of No. 1, and No. 3 Solution three times the strength of No. 1. This would account in a measure for the variations in the strength of iodine in the formulæ already given, but apparently the preparation is going out of favour here, for although the three strengths are still kept in the throat department, No. 1 is the one used, and that only occasionally. I have not seen it combined with carbolic acid.

Edward A. Andrews, Dispenser.

St. Mary's Hospital, London, W.
March 1, 1902.

I have prepared Mandl's solution for a leading local ear and throat specialist in three strengths, viz.:—

	I.	II.	III.
℞ Potass. iodidi	gr. xxv.	gr. l.	gr. lxxv.
Iodi.	gr. 6¼	gr. 12½	gr. 20.
Glycerini	℥i.	℥i.	℥i.
Ol. menth. pip.	gtt. iii.	gtt. iii.	gtt. iii.
M.		M.	M.

Glasgow, March 1, 1902. J. P. Gilmour.

Pyroxylin—A Caution.

Some thirty odd years ago when I was an apprentice it was our custom to make our own pyroxlin and collodion, but times have changed since then, and customs too. Wanting some guncotton for flash-light purposes, I ordered from a well-known drug house The bottle containing it was put aside for some time, and on going to it the other evening the cork crumbled to pieces in my fingers and the pyroxylin had shrunk up to about a quarter its original bulk. I tried a little piece in a gas flame, but instead of exploding with a flash it simply smouldered. Later in the evening my hands felt as though attacked with bad chilblains, but the weather being milder, I could not account for so sudden an attack until I found the irritation was caused by the imperfectly washed pyroxylin and decomposed cork. Now, supposing collodion should have been made from such a sample, what an amount of irritation would be produced on a patient's skin. I think it my duty to mention the circumstance in order to put on their guard those who prepare pyroxylin, and to show that they cannot be too careful in the final washing of the same.

Surbiton, February 25, 1902. John Pim Jackson.

Gloss on Dog's Coat.

In regard to a correspondent's query as to raising the gloss of a dog's coat, I have found nothing to equal a mixture of raw linseed oil and paraffin, in the proportion of, say, 1 drachm of paraffin to 8 ounces of oil. This to be well rubbed in with the hands, afterwards brushing the coat. Very frequently the dulness of a dog's coat is due to the presence of worms. No external application is of any use if this is the case, and your correspondent ought to assure himself that these parasites are non-existent.

Hounslow, February 28, 1902. Fred. Straughton.

The Apprentice Question.

Although now about thrashed out, will you kindly grant me a little space on this question? Numerous questions have been asked and answers given which I will not enumerate. Many suggestions have been made, but there is one point in connection with this scarcity which, so far as I have seen, has been overlooked. I blame both the Pharmaceutical Society and chemists as a body. If the Pharmaceutical Society would try to rush a clause in any new Pharmacy Bill dealing with "covering" or "infamous conduct," I think it would put the individual trading—or practising—chemist on a better footing, and apprentices would again be forthcoming. I blame chemists because, as an educated class, they stoop—the rank and file—to a low level, instead of trying to uphold a little dignity. Branch shops are opened in obscure and ridiculous positions; any scraped together fittings pushed in; in many cases a youth or boy sent to attend. This is termed a chemist's shop. Any ½d. worth or 1d. worth supplied. The public see this, look upon the chemist as merely a shopkeeper—keeps an open shop to sell anything—his business is a trade, far from a profession; they can buy a 6d. bottle of Lever's or somebody's glycerin at the grocer's or co-op. store next door, and take the empty bottle in to him for a 1d. worth next time. Long hours have something also to answer for. Now I ask, Is it reasonable to expect a man in a pretty good position sending his son—after receiving a good education—to the business? I say no. Mr. Noble, of this city, read a paper on the question before the local association. He also makes suggestions, but may I ask him how many youths he expects will come into the fold in face of his announcement to the public that he opens at 7 a.m.? and as he does not close until after 11 p.m., making a day of sixteen hours. The youth of to-day wants to cycle in the evenings in summer, and witness cricket or football matches, as the case may be, on Saturday afternoons. I do not infer that the youth expects to work so long when either apprentice or assistant, but he is capable of looking far enough ahead to see that if he gets into business on his own account and works single-handed, he—in order to make a living—will have to fall into the same groove. Again, I say vulgar advertisements have something to answer for. My contention, therefore, is that the public look upon the business as a very inferior one, as a tailor said to me one day that "a chemist's trade seemed to be made up of so many 2d. and 3d. small items."

Newcastle-on-Tyne, March 4, 1902. "Antique" (124/4).

The Use of Distilled Water.

Having lately received price lists of stills suitable for distilling water on chemists' own premises, I was struck with a danger liable to occur as a result, should freshly distilled water be used for preparing Liq. Calcis, B.P., prior to it having been allowed to become absolutely cold. Owing to most things being more soluble in hot or warm water than in cold, it would appear an advantage to the unitiated; but the fact is, as you are aware, that whereas a pint of water at 32° dissolves 13·25 grs. of lime, a pint at 60° only dissolves 11·6 grs., and actual boiling water will only dissolve 6·7 grs. Many chemists may not be aware of, or might inadvertently overlook this fact, especially apprentices and juniors, whose lot it usually is to prepare it. This may prevent some upright principal being unjustly prosecuted by some energetic inspector. I may add that when I commenced business I purchased a still, and found aq. dest. cost me 8d. a gallon to produce, apart from time. I now put my trust in a respectable drug house, which does distil water, and does not condense waste steam from their machinery.

Shrewsbury, February 25, 1902. C. W. Eldred.

The Ammonium Molybdate Test for Hypophosphites.

In the "Analytical Notes" published by Mr. F. A. Upsher Smith in a recent issue of the *Pharmaceutical Journal* reference is made to the above test, and, as inaccuracies occur, it is advisable that they should at once be corrected. Mr. Smith apparently attributes the test to Attfield's 'Chemistry' (edition not stated), but, as a matter of fact, no reference to this test occurs in any edition of this text-book until after the appearance of my note (*P.J.* [3], **19**, 585) on the test, where the suggestion of the addition of sulphurous acid was first recommended. Mr. Smith labours the point that ammonium molybdate itself is unreliable as a test for hypophosphites. This was exactly the cause of my note, and it is unfortunate that Mr. Smith, whilst giving me credit for recommending a strongly acid reagent, should proceed to condemn the test when using a different reagent. The strongly acid reagent is prepared as follows:—Dissolve 1 part of molybdic acid in 4 parts of solution of ammonia B.P., and pour into 15 parts of nitric acid of specific gravity 1·2. The solution gradually deposits, and the clear liquid can be poured off. If this solution be employed in testing hypophosphites or hypophosphorous acid, there is no difficulty in obtaining the blue precipitate or colour when a few drops of sulphurous acid are subsequently added. With this solution no colour is given on the addition of diluted hydrochloric or sulphuric acids, as stated by Mr. Smith to occur with ammonium molybdate, nor does sulphurous acid alone give with this solution a blue colour. That it gives a blue colour with a hypophosphite on standing for some hours is correct, but the addition of sulphurous acid develops the colour immediately. I may add, for the purpose of clearness, that I find the best proportions for the test are as follow:—0·1 Gm. of a hypophosphite dissolved in 2 C.c. of water, add 1 C.c. of the strong nitric acid solution of molybdate and 2 drops of sulphurous acid. An immediate blue colour occurs, rapidly turning into a heavy precipitate. An excess or deficiency of the test solution is to be avoided, as, although a coloration appears, it becomes brown or colourless more or less quickly on standing. The delicacy of the test is well shown by dissolving 0·1 Gm. of sodium hypophosphite in 100 C.c. of water. 2 C.c. of this solution, representing 0·002 Gm. of the salt, to which 2 drops of the reagent is added, and 2 drops of sulphurous acid, will develop a deep blue colour on heating. The tests for hypophosphites are not sufficiently numerous or characteristic that we can afford to do away with one that is both distinctive, rapid, and accurate

London, February 25, 1902. E. J. Millard.

Nitro-Propiol.

Referring to your notice in your issue of February 22, with reference to the introduction of the Nitro-Propiol test by Messrs. Burroughs and Wellcome, we beg to point out that the designation "Propiol" has been protected by us under the Trade Marks Registraton Act, and that any person applying this trade mark, alone or in combination with other marks or words, to goods not supplied by us renders himself liable. Upon the strength of this registration the Nitro-Propiol test has been introduced by us in this country at considerable expense and trouble. We, therefore, do not intend to see our rights infringed by any other firm. If Messrs. B. and W. intended to bring out a similar test nobody could prevent them from doing so, provided they used a distinctive name, and thus spent their own labour and money on its introduction. We have published the formula without reserve, to enable any chemist to make the tablets, but we must insist upon our trade-mark rights being respected. The word Propiol, for "orthonitrophenylpropionate of soda," is no more descriptive than the word Tabloid for tablets, and if the one be contested the whole question should be threshed out in the interests of trade generally. F. Williams and Co.

83, Upper Thames Street, E.C., March 3, 1902.

Coroner's Inquest Fees.

Twice within twelve months I have been called upon to give evidence before a coroner's jury in cases of carbolic acid poisoning, and have been paid the fee of one shilling. Surely this is inadequate. A doctor giving evidence is entitled to a fee of one guinea. I should think a chemist's evidence, if not "expert evidence," should be worth more than a shilling.

Amersham, February 28, 1902. E. Thos. King.

Bottles for Poisonous Liniments.

Our attention has been drawn to a letter published in the *P.J.* of February 15, from Mr. Gibson Dixon, President of the Halifax and District Chemists' Association, in which he mentions a doctor who asked him, "Who is going to pay the difference in price between the medicine and poison bottles? How long are the lives of the poor patients to be risked for the sake of a penny?" In stating this we think he is in ignorance of the existence of the "Practical Poison Bottle," and if he refers to the price of these bottles, as sold by some of our leading druggists' sundry houses, he will see that this bottle is no dearer than a good dispensing bottle. We took great trouble and pains, and went to great expense, in bringing this bottle out. The sale is steadily increasing for it, and any of your readers can see for themselves the advantage of this exceptionally shaped and strong bottle by referring to the advertisement in your issue.

"The Manufacturers of the Practical Poison Bottle"

London, February 22, 1902. (122/7).

Side-Lines for Chemists.

You were good enough lately to allow me to explain in the Journal how I came to take out a wine licence, and I should like a few words in reply to your correspondent J. Todd. Very probably he is one of those "worthy chemists" who have done, and are doing, so much harm to their brethren. I will illustrate. Last year I spent a few days in Scarborough, and was in want of some p. glycyrrh. co. I picked a very good-looking shop, after making sure that it had not a certain name over the door, though I found out afterwards that it was a "Stores." I was charged 1d. per oz. for it, was assured that it was the best quality, and, with the exception of its being ready wrapped up and a little caked, found it so. Later I asked, at what your correspondent would doubtless call a "worthy" chemist's, for boric acid. I was charged 4d. per oz., and the care in giving bare weight was extreme. Now, my argument is that these absurd prices charged by the "worthy chemists" account for the rush to the stores and, incidentally, to the obligation upon us poor country chemists of resorting to side-lines to make ends meet. A good many "Square" men are scattered about the country; they have been certified by the Pharmaceutical Society; but because they are obliged, by the force of circumstances, to resort to side-lines, your self-appointed censor stigmatises them as the reverse of "worthy.'

February 24, 1902. "Countryman" (122/1).

I notice in the Journal of February 22 a letter which rather roughly criticises the impromptu discussion of the Chemists' Assistants' Association. Will you kindly allow me this short space to state that Mr. Todd has quite misread the report of this meeting as published in the *P.J.?* The remark quoted was made by myself, and I am glad that others saw in it, if Mr. Todd did not, some breath of the humour of the situation—viz., "a pharmacist selling to bibulous navvies tankards of 'stout and mild,' drank in a foul little room adjoining the shop." Certainly the C.A.A., that lives for the progress of pharmacy, could not wish for such a new sideline. I should like to inform Mr. Todd that the C.A.A. meets every Thursday evening; that its meetings are chiefly scientific, but always sociable; and that some are especially arranged, such as impromptu discussions, for bringing out the latent "stuff o' the man" and for friendly unbending in matters pharmaceutical.

London, March 4, 1902. J. Wicliffe Peck,
President, C.A.A.

Dispensing Queries.

What would be the proper method to dispense the subjoined prescription? Will some of your readers kindly give their opinion and oblige?

℞ Sulphur .... gr. iii.
Ol. terebinth. .... miii.
M. ft. pil. tales 48. Sig. One t. i. d. post cib.

The method I adopted was to liquefy the sulphur with as gentle a heat as would accomplish this, then add the turpentine, and stir till the mixture solidifies. Afterwards rub down in mortar and mass with glycerin of tragacanth pill excipient.

March 1, 1902. "Radix" (123/40).

In the copy of last week's Journal sent to me, the amount of ferrous iodide was omitted by the printers from my query. The prescription should be:—

℞ Ferri iodid. .... gr. ii.
Hyd. *c.* cret. .... gr. ¾.
Ext. nux vom. .... gr. ¼.
Ext. hyoscy. .... gr. i. or *q.s.*
Ft. pil. i., silvd. Mitte xii.

"Failed" (123/44).

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply.

Dispensing Solution (J. W. S.—70/32).—The acid solution appears to be indicated in this instance. In any such case of uncertainty you must, of course, exercise your discretion.

Legal (J. B.—70/5).—(1) Such a case would probably come within the exemptions in Section 16 of the Pharmacy Act, 1868. (2) Messrs. Flux, Thompson and Flux, 3, East India Avenue, London, E.C.

Metal Polish (W. T.—70/33).—We have no acquaintance with the preparation and are unable, therefore, to suggest its probable composition. Have you examined it for the presence of oxalic acid?

Medicine Stamp Duty (H. B.—70/3.)—The printed matter on the envelope undoubtedly renders the powder liable to stamp duty, and the window bill makes matters much worse, as you there claim a proprietary right in the preparation.

Toilet Pins (A. E. B.—70/24).—Try the effect of suspending "tous les mois" starch or finely ground talc or mica in a solution of gelatin. You can obtain the ground talc ("hoar frost") from Messrs. Harrington Brothers, 4, Oliver's Yard, City Road, London, E.C.

Violet Ink for Rubber Stamp (A. F. C.—70/1).—(1) Methyl violet, 3 B, 1; water, 4; methylated spirit, 4. Dissolve, and add simple syrup, 1; glycerin, 1. If too strong add more spirit and water. (2) Methyl violet, 3 B, 1; glycerin, 3; methylated spirit, 4; gum acacia, 3; water, 16. Mix.

Shaving Block (J. W. T. M.—70/2).—The preparation you mention is stated by the manufacturers to contain glycerin and boric acid. When heated carefully the acid loses nearly half its weight of water, and the residual boric anhydride solidifies to a brittle glassy mass on cooling. The glycerin is probably added to the liquid anhydride.

Chiropody (J. P. B.—70/34).—The only advice we can give you is to obtain the necessary instruction from some practitioner of the art, who will also, doubtless, assist you in the selection of the proper instruments. Cases containing sets of such instruments can be purchased from Messrs. Maw, Son, and Sons, or other dealers in surgeons' instruments and appliances.

Opium Traffic (S. J. L.—122/27).—A discussion on this subject would be out of place in these columns. Mr. Dott was fully justified by the facts of the case in writing as he did. You should not overlook the fact that the latest edition of 'Pharmacographia' was published twenty-five years ago and that developments have taken place, even in China, during that period.

Dry Shampoo Liquid (J. P. S.—70/4).—Try one of the following formulæ:—(1) Borax, 4 drachms; ammonium carbonate, 4 drachms; tincture of quillaia, 1 fluid drachm; oil of *Myrcia acris*, 10 minims; rectified spirit, 5 ounces; distilled water to produce 20 fluid ounces. (2) White Castile soap, 1 drachm; rectified spirit, 7 fluid ounces; eau de Cologne, 1 fluid ounce; distilled water, 3 fluid ounces. Dissolve the soap, then filter and add solution of ammonia, 1 fluid ounce.

Ink for Tin to be Applied with Stamp (E. M. T.—70/30).—You will probably find ordinary printer's ink, of various colours, most suitable for the purpose. It might be necessary to add a little saturated solution of copper sulphate to this, and mix it very thoroughly. This would probably be found to make the ink "bite on" to the tin surface. Most tins which are printed on are first varnished. It won't pay you to make printer's ink on the small scale.

Water-glass (F. H. R.—70/29).—(1) Potash water-glass is prepared by fusing powdered quartz with potassium carbonate and charcoal, and dissolving out the resulting potassium silicates with boiling water. Soda water-glass is a mixture of sodium silicates prepared in a similar way from sodium carbonate. Double water-glass contains both potassium and sodium silicates. See Wagner's 'Chemical Technology' for processes of manufacture. (2) The probable impurities in the commercial articles are such as may occur in impure potassium and sodium carbonates, including those you mention.

Pharmaceutical Journal.

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LONDON: SATURDAY, MARCH 8, 1902.

ANNOTATIONS.

The Martindale Memorial Committee has now been appointed, and is a thoroughly representative one, as will be seen on referring to the report of Tuesday's meeting (p. 194). The consensus of opinion at that meeting appeared to be in favour of a two-fold memorial—something of a permanent nature in the Pharmaceutical Society's London house, with an addition which should have the effect of keeping the deceased pharmacist's memory green, by bringing his name and work into prominence at least once each year. The first object, it was thought, would be best served by having a Martindale bust—preferably of marble—displayed in a prominent position at the Society's headquarters, and it was definitely decided that steps should be taken to provide such a bust. As for the second object, there was a distinct feeling in favour of the annual presentation of a Martindale medal in practical pharmacy, under similar conditions to the Pereira medal, as suggested in last week's Journal by Mr. Robert Wright, of Buxton. A subscription list was opened at the meeting, with most gratifying results, the sum of fifty guineas being at once promised by those present. Further subscriptions or promises should be sent to the Hon. Secretary of the Martindale Memorial Committee, 17, Bloomsbury Square, London, W.C. It may be pointed out that a sum of not less than four hundred pounds will be required to provide a marble bust and a silver medal, with prize of books, annually. A useful scholarship could not be founded with a smaller amount than three thousand pounds.

The Medical Practitioners of Glasgow held a meeting on February 27, for the purpose of further discussing the action taken by the General Medical Council in prohibiting the employment of unqualified assistants to sell scheduled poisons. The chair was taken by Dr. Burgess, who said a period of difficulty had come upon the profession, and local practitioners had been hardly used, their privileges having been taken from them in a manner resembling the procedure adopted by "a trade union or an American trust." Their rights, he added, were being interfered with "in a contemptible and sneaking way by a body which ought instead of doing so to have conserved their interests." This strangely unparliamentary language of Dr. Burgess was applied to what he was pleased to term the recent "edict" of the General Medical Council, which—in his opinion—makes it dangerous for medical practitioners to continue to keep open shops, though it does not actually compel them to close such establishments. He acknowledged the fact that many practitioners are opposed to shopkeeping by medical men, and admitted that it might be a good thing if the unprofessional custom were put an end to, but he asked in return for a *quid pro quo*. What that might be, however, Dr. Burgess did not explain clearly. In regard to prescribing by chemists, he said he would do nothing to prevent it. The General Medical Council ought to obtain powers "to stop colourable imitations of medical qualifications," but to go further would not be consistent with professional dignity. Continuing, Dr. Burgess repeated that he strongly objected to the action taken by the General Medical Council, in regard to the sale of poisons by the unqualified assistants of medical practitioners, and he asserted that the recent exercise of disciplinary powers by that body indicated that it had been "taken by the nose and allowed itself to be led as an ox to the slaughter."

Private Surgeries, according to Dr. Burgess, are places where medicines are dispensed from stock bottles by housemaids or charwomen—a system of dispensing which he rightly protested against, as not redounding to the credit of the medical profession. But he did not make out much of a case for the open shops kept by so many practitioners in Glasgow, when—after alleging their superiority over private surgeries, although not in charge of qualified persons—he rashly asserted that anyone of average intelligence could learn all that was required in a doctor's ordinary dispensing within a fortnight (*sic*). That view does not appear to have commended itself to the meeting in its entirety, but another speaker—Dr. Granger, while not prepared to go so far as to say that a fortnight's training would suffice, asserted that an unqualified person could learn to dispense "exceedingly well" in a very short time, the more especially as medical practitioners did not write elaborate prescriptions when the medicine was to be dispensed in their own establishments. Various other speakers followed Dr. Granger, all appearing to be much more concerned about their private interests than the public welfare, but a reference to the wider aspect of the case found expression in the speech of Professor Barlow, who spoke last of all, and undertook to support the claims for non-interference with established usage, when they were brought before the Faculty of Physicians and Surgeons of Glasgow, as arranged at the meeting. He remarked somewhat significantly, however, that the agitation about dispensing medicines in open shops was not likely to stop at the present point, and he was careful to explain that the General Medical Council had taken action for the safety of the public. He added that, if it was unsafe to have poisons sold across the counter in open shops by unqualified persons, it was just as unsafe to have medicine containing poison dispensed by unqualified persons in private surgeries. If, therefore, "the Pharmaceutical Society gained their point in this case, they would be compelled to interfere with the doctor keeping an unqualified dispenser for that purpose."

The Pharmaceutical Society of Ireland has recently issued its Calendar for 1902, the little volume containing the customary information concerning pharmacy in Ireland, corrected up to January 1. The statistics of the Pharmaceutical Society of Ireland do not indicate any great alteration in the numbers of those engaged in the practice of pharmacy in the sister island, as the following comparative statement shows:—

Class.	December, 1900.	December, 1901.	Increase.	Decrease.
Pharmaceutical Chemists....	617	640	23	—
Members of the Society......	177	184	7	—
Chemists and Druggists......	285	274	—	11
Registered Druggists	481	499	18	—
Associate Druggists..........	36	38	2	—
Assistants to Pharmaceutical Chemists	33	47	—	9

It will be noticed that the membership of the Society has not increased proportionately to the increase, slight as that is, in the numbers of pharmaceutical chemists; neither has the number of associate druggists in what may be regarded as a proper ratio. Altogether, at the end of December last, the subscribers to the Pharmaceutical Society of Ireland numbered 222 (184 members and 38 associate druggists), as against 213 at the close of the year 1900. The registered persons, excluding the assistants to pharmaceutical chemists, numbered 1,413, as against 1,385 twelve months earlier.

The Chemists' Defence Association is doing good work in taking steps to ensure the strict interpretation of the Sale of Food and Drugs Acts, as witness the case, reported briefly last week (see p. 180), in which an attempt was made to prove that beeswax must be a drug if sold by a chemist, though it was acknowledged that it is not a drug if sold by a grocer. The case of Fowle *v.* Fowle (see *P.J.* [4], **3,** 413) decided the latter point. The defendant in that case was a grocer against whom a charge was brought of having sold impure beeswax, contrary to the provisions of the Sale of Food and Drugs Act. The magistrates, before whom the case was brought, held that beeswax was not a drug, and dismissed the case. Justices Grantham and Wright subsequently found that the magistrates were right in their decision, because the defendant was a grocer, a loophole being thus apparently left for public authorities to proceed against chemists for selling what a grocer could sell with impunity. But Mr. Justice Wright was careful to say that a substance which was not invariably used for medicinal purposes would only be a drug if sold by a chemist for medicinal purposes. He mentioned turpentine and resin as substances of the kind he meant, and beeswax is much less used for medicinal purposes than either of those substances. In the great majority of instances it is sold by chemists for the same purposes as when sold by grocers and others, and the mere fact that the wax is mentioned in the Pharmacopœia and sold by a chemist does not necessarily convert it into a drug. But, apart from any other circumstance, it is obviously unfair to attempt to make the sale of any article an offence because the seller is a chemist. Adulterated substances should never be sold by chemists who have a proper regard for their reputation, but any attempt to impose the British Pharmacopœia upon one class of traders only, as a universal standard for trade articles, should be most strenuously resisted. At the moment of going to press we learn that the magistrates' decision in the Deal case is not to be appealed against, but it is, of course, quite possible that further attempts may yet be made to raise the question of the special liability of chemists in regard to substances sometimes sold for medicinal purposes.

Commercial Scholarships are to be established at Owens College, Manchester. Mr. J. H. Gartside, of Hollingworth, Cheshire, and Overstone Park, Northampton, having generously given the sum of £10,000 for promoting the higher and more effective study of commerce and industry by the endowment of what will be known as "The Gartside Scholarships of Commerce and Industries." The scholarships are intended to induce young men who have already received a good education to devote a year at least in Owens College to the special study of subjects bearing on commerce and industry, and then to go abroad for the study of some particular subject, either in Germany or the United States, or some other country approved by the electors to the scholarships. The emoluments of each scholar while in England will be about £80 a year, but when travelling abroad a larger sum will be given, and the scholars are to furnish reports of their investigations in the foreign countries which they visit.

The Dispensers' Committee appointed by the Council of the Pharmaceutical Society has now presented an interim report (see p. 197), in which it is shown that the dispensing arrangements in public institutions are satisfactory for the most part. Particulars have been obtained concerning 694 dispensaries, and in 527 instances the responsibility for the dispensing of medicines lies in competent hands. It is stated that, as a general rule, public authorities conducting or controlling hospitals, infirmaries, or dispensaries are fully aware of the importance of the work of compounding and dispensing of medicines, and are careful to appoint dispensers who possess a statutory qualification. The patients in those institutions are thus properly protected, but in a number of other intitutions, depending upon voluntary support, "the protection of patients from unqualified dispensers" is apparently not regarded as a matter of such serious importance.

An Evening Meeting of the Pharmaceutical Society will be held at 17, Bloomsbury Square, London, on Tuesday next, March 11, when the President is expected to take the chair, and three communications will be presented from the Research Laboratory. Mr. W. Garsed, the Salters Research Fellow, will read a paper on "Liquid Extract of Coca", Professor Greenish and Mr. F. A. Upsher Smith will submit a report on "Solution of Mercuric Chloride," and a paper on "Extract of Gentian" will be communicated by Professor Greenish and Mr. W. H. Lenton (E. Northway Butt scholar). The chair will be taken at eight o'clock precisely.

The Annual Dinner of the Pharmaceutical Society will soon be an event of the immediate future, and a meeting of members of the Society will be held at headquarters on Wednesday next, March 12, at twelve o'clock, to make the necessary preliminary arrangements. Members who do not expect to be able to attend the meeting, but are anxious to co-operate in making the twenty-ninth annual dinner a success, should send their names to the Secretary on or before March 12.

The Leeds Chemists' Association has lost one of its former presidents by the death of Mr. Edward Brown, who is described in an obituary notice in a local newspaper as one of the last links between the ancient knights of the pestle and mortar and the modern school of pharmacists. He kept abreast of later developments, while preserving many of the best characteristics of the old-fashioned, highly-qualified apothecary, and in an unusually large measure he enjoyed the confidence of the medical profession and of the public. Mr. Brown attracted attention by his conscientiously formed opinions, which he was not afraid to express. Moreover, he was well read and well informed on a variety of subjects.

LEGAL INTELLIGENCE.

Pharmacy Act, 1868.

The Sale of Insecticide.

At the Newcastle-under-Lyme Police Court, on March 3, Moses and Ernest Jenkinson, florists and horticulturists, of Newcastle, trading in the style of M. Jenkinson and Sons, were summoned at the instance of the Pharmaceutical Society, under Section 17 of the Pharmacy Act, 1868, for selling an insecticide containing a poisonous vegetable alkaloid, without a label being attached to the vessel in which it was supplied, bearing the word "poison" and the name and address of the seller.

Mr. J. E. Moxon prosecuted on behalf of the Society. Mr. M. Jenkinson was defended by Mr. T. B. Sproston, and Mr. E. Jenkinson by Mr. T. G. Dobbs, solicitor to the Traders in Poisons Protection Society, Worcester.

Mr. Moxon stated that, on January 11 last, John Morgan, gardener to Mr. A. Bullock, the Cedars, Quarry Avenue, Stoke-on-Trent, went to the shop of the defendants in Merrial Street, Newcastle, and purchased from a servant of the defendants a pint of "X L All" insecticide, which was supplied in an old brandy bottle, without any label except one relating to brandy. No warning was given, but the salesman remarked as he supplied it that Morgan must not make a mistake and have a drink thinking it was whisky. Morgan used a little of the insecticide and placed the bottle on a bench in the potting shed at his employer's garden. On January 23 a man named Thomas Bullock was working in the garden, and some beer which he sent for was also put in the potting shed. The beer was in a bottle very similar to that containing the insecticide, and Bullock in mistake drank some of the latter and died in a short time. At the inquest the jury returned a verdict of "death by misadventure," and requested the Coroner to communicate with the authorities on the danger accompanying the selling of such compounds without any indication of their poisonous character.

Evidence having been given in support of the foregoing statement, Dr. Manfield was called to show that the insecticide contained a considerable percentage of nicotine, a poisonous vegetable alkaloid, and that less than an ounce of the compound would probably cause death.

Mr. Dobbs, for the defence, said the Pharmacy Act was one which had been many times commented upon adversely, and Lord Watson had stated that it was characterised by great ambiguity and almost confusion of language. Under Section 15 any person selling poisons not being a registered chemist or druggist was liable to a penalty, and that applied to assistants. Section 17 made it unlawful to sell any poisons, wholesale or retail, unless the vessel containing the poison was labelled as such, and with the name and address of the seller. Under that section the employer was held responsible for the act of his servant, but under Section 15 he was not. Mr. Dobbs claimed that the intention of the Act was to make chemists and druggists the only persons who should handle poisons when they were required for medicinal or therapeutic use, as distinct from articles for trade purposes. He contended, therefore, that this was not a poison within the Act, and contended that if the Bench held that it was, it would be equivalent to saying that paint, which contained arsenic, was a poison within the meaning of the Act, and therefore could not be sold by oil and colour men or ironmongers. Scarcely a tradesman would escape this Act if it was interpreted so, and the question was one of the utmost importance. He argued that insecticide was not a poison which should be sold only by chemists and druggists, and if that was so, then there was no need for it to be labelled "poison," or with the name of the article, or with the name of the seller. If it was necessary, what was the name of the article which ought to be put on the bottle? Were they to put on insecticide, or nicotine, or what? What were they to label paint? Arsenic, or lead, or what? Supposing that the Bench found that it was poison within the meaning of the Act, he further contended that evidence of the percentage of nicotine was essential.

Mr. W. G. Whiffen, manufacturing chemist, Battersea, the maker of the insecticide, stated that it contained only 4 per cent. of nicotine. It also contained soap and some other ingredients which were unimportant and not poisonous. For years it had been the practice of seedsmen and others to sell the insecticide with a caution label, but without stating that it was poisonous.

The Chairman said the Bench was unanimous that an offence had been proved, and fined the defendants £2 and £3 3s. costs. The magistrates were quite aware of the importance of the case, and that it would to some extent produce a revolution in the sale of these poisons, but it was very important that poisons should not be sold without proper precautions being taken, and being properly labelled.

Mr. Dobbs asked the Bench to state a case for the High Court, and that request was granted.

Sale of Food and Drugs Acts.

Spirit of Nitrous Ether.

At Swindon Police Court, on February 27, Silas Daniel, pharmaceutical chemist, Regent Street, Swindon, was charged with selling sweet spirit of nitre which was not of the nature and substance demanded. The Food and Drugs Inspector of the Wiltshire County Council purchased four ounces of sweet spirit of nitre from the defendant, and Dr. Bernard Dyer, County Analyst, found that it only contained 0·85 per cent. of ethyl nitrite, being less than one half the minimum quantity laid down in the British Pharmacopœia, not for new spirit, but for spirit taken from a bottle which was occasionally opened.

Mr. Martin Priest, of the firm of Attfield, Thresh, and Priest, and a member of the Society of Public Analysts, stated that sweet spirit of nitre was liable to evaporation, and there was scarcely any article that would so readily decompose and split up into its component parts. Combined evaporation and decomposition would reduce the strength of the spirit to 0·85, that mentioned in the certificate. There was a loss of strength every time the bottle was opened, and the process of purchase and dividing into three parts for analysis would result in deterioration to the extent of anything up to 10 per cent. He agreed that a strength of 0·85 was very weak, but, on the other hand, he considered the minimum standard of 1·75 rather too high.

Mr. William Johnson, a London pharmaceutical chemist, of twenty-eight years' experience, said he knew of no article more liable to decomposition than sweet spirit of nitre. He gave an account of experiments he had made showing the rapid decomposition of the spirit when the bottle containing it was opened.

Mr. Withy contended that it had been proved that it was the custom to keep two sorts of spirit, one for sale in pennyworths and the other for the purpose of doctors' prescriptions, but

Mr. Bevir ridiculed the idea of the existence of any such commercial standard as that suggested by the defence. He quoted a decision of Judge Phillimore in a case where two sorts of spirit were kept, one for the ordinary customer and the other for people who brought prescriptions from medical men, in which his Lordship told the chemist that he might as well keep two sorts of weights.

The magistrates said they felt bound to convict, but there was no charge of fraud against defendant, and they would only fine him 20s., with £5 4s. 6d. costs.

Mr. Withy asked that entry of judgment should be postponed for a fortnight, in order to give defendant an opportunity to appeal.

The magistrates granted the application.

Spirit of Nitrous Ether.

At Swindon Police Court, on February 27, John Pavey, of Bishopstone, was summoned for selling sweet spirit of nitre containing only 0·50 per cent. of ethyl nitrite. A fine of 20s. and £1 18s. 6d. costs was imposed.

Liniment of Soap.

At Bow Street Police Court, London, on February 28, before Mr. Marsham, the case against Mr. A. B. Spink, 134, Theobald's Road, W.C.—adjourned from February 4 (*vide P.J.*, February 22, page 170)—for selling, to the prejudice of the purchaser, liniment of soap alleged to contain 40 per cent. of methylated spirit was again heard.

Mr. Beck, for the defence, stated that the case was one of great importance, as it involved the point whether the British Pharmacopœia was the sole standard for everything it contained. The prosecution said it was, and that once a drug was mentioned in the Pharmacopœia, it must be sold under the formula given therein; but he submitted that the sole purpose for which the Pharmacopœia was originally compiled was that it might be a standard for preparations used in the compounding of physicians' prescriptions. Soap liniment was a domestic remedy which had been sold prepared with methylated spirit for the last fifty years, and this sale could not, therefore, have been to the prejudice of the purchaser. He would call medical evidence showing that both liniments had the same medical value, and also several chemists, of many years' experience, to show that the liniment in question was prepared according to a well-known commercial standard. He also maintained that the analyst's certificate was misleading and inaccurate. The certificate stated that the sample contained 40 per cent. of a foreign ingredient—methylated spirit. As a matter of fact, 90 per cent. of this methylated spirit was rectified spirit, and therefore only 10 per cent. of it—the wood naphtha—was a foreign ingredient.

Dr. Arthur Mickle gave evidence to the effect that soap liniment was generally made with methylated spirit, and that, when thus made, it did not differ in medical value from the liniment made with rectified spirit. In writing a prescription it was not customary to put "B.P." against the various ingredients, but if a doctor sent a prescription to a chemist he would expect it to be made up according to the Pharmacopœia, because the composition of articles in the Pharmacopœia was well known. He did not know that under the Pharmacy Act, 1868, it is a punishable offence to compound drugs otherwise than in conformity with the B.P.

Mr. F. Norman, M.R.C.S., L.R.C.P., said he used methylated soap liniment in the Camberwell Public Dispensary. He knew of no difference medically between the two. The use of methylated spirit enabled the liniment to be sold cheaper, without impairing its efficacy. Economy was the sole reason for its use—both were equally efficacious. There was a slight difference in smell between the two. If he prescribed liniment of soap he would write "linimentum saponis." It was generally understood by the medical profession, dispensers, and chemists that for all practical purposes both were the same. The use of the Pharmacopœia was to obtain—more or less—a uniformity of standard, but there was a well-known commercial standard for many articles in the Pharmacopœia.

At this point the case was adjourned to March 3, and on that day, without further hearing, was again adjourned to March 5, when further evidence was given for the defence by Mr. W. S. Glyn-Jones and other witnesses, after which the magistrate said he would reserve his decision for a few days.

NORTH-EAST LANCASHIRE CHEMISTS' ASSOCIATION.

The annual dinner of the North-East Lancashire Chemists' Association was held on Thursday, February 27, at the White Bull Hotel, Blackburn. Councillor T. Critchley (President) occupied the chair, and there was a large attendance, the principal guests being Mr. G. T. W. Newsholme (President Pharmaceutical Society), Mr. C. B. Allen (Vice-President Pharmaceutical Society), Mr. E. Evans, junr. (Liverpool), and Mr. G. S. Woolley (Manchester).

Mr G. S. Woolley proposed the toast of

The Pharmaceutical Society.

He said the old members of the Council of the Society, as they knew, gave the best years of their lives to raise the status of their craft. They found the craft or trade a medley of some few educated men, many partially-educated men, and a good many ignorant men. To-day there existed something very different—they might say that they were a thoroughly educated body, occupying a position something approaching a profession. Those old members were succeeded by others who were doing the same good work, but the Pharmaceutical Council could not be blamed for not foreseeing such a thing as the Companies Act. Nor could they foresee how the 1868 Act would be prostituted, as in the present day, nor how a judgment could be given making it legal to evade that Act in one direction and illegal to evade it in another. Neither could they anticipate the difficulties and rocks which now beset them. There was no mistaking the fact that the present condition of things was unsatisfactory, and the question was how to improve it. They looked to the Council to improve their position, and as every member of that body was engaged in the trade, they would be quite alive to the necessity of doing their best to alleviate the position. But everything could not be left to the Council—they must help themselves. At present only about one-third of the registered chemists of the country were members of the Society, a fact which was constantly thrown in the teeth of the members of the Council when they interviewed Government officials and members of Parliament, and he had heard M.P.'s say, "Oh, you don't represent the trade"; but if every town in Great Britain had the same proportion of members as Blackburn had the position of the Pharmaceutical Society and the voice of its Council would be far stronger than it was. There were not many chemists in Blackburn who were not members of the Society, and if those few could be induced to join Blackburn would have achieved a record. Then the "Blackburn Brass Band" would be able to play a tune which would rouse the chemists of the country to a sense of their duty to join the Society. Grumblers about the Society's work had no idea of their difficulties. A number of them seemed to think they could have Acts of Parliament for the asking; but there were endless interests to consult, notably the interests of companies and of co-operative societies, and all those bodies had representatives in Parliament, which the chemists had not. What chemists lacked is some member of the trade who would go into Parliament and assist them to obtain a more satisfactory Act. They had recently had an infusion of new blood on the Council in the shape of Mr. Lord Gifford, Mr. Glyn-Jones, and Mr. John Taylor—all good men; but he didn't care how they formed the Council—they might have it constituted entirely of Giffords, or Woottons, or Taylors; they might enlist the services of the angel Gabriel—but they would still have grumblers. Still, the present was a good sound representative Council, and he hoped it would have a long lease of office. In conclusion, he congratulated Mr. Newsholme on being the first provincial pharmacist to be honoured with the presidency.

Mr. Newsholme, who responded to the toast, said it was a fact that every member of the Council was just as much interested in the trade as any man in that room, and every one of them was anxious to do his best for himself and every member of the craft. But chemists did not occupy a very pleasant position. Every registered chemist in the country was anxious to look after the interests of the public—and incidentally his own—in the matter of the sale of poisons; but their education fitted them for something more than that. The various Acts of Parliament, and more particularly that of 1868, which made them responsible for the sale of poisons, made it compulsory that every man using the title of chemist and druggist must prove his competence by passing an examination before he was deemed fit to look after the interests of the public and use that title. It had been frequently said that the Council of the Society did not represent the trade. There were always critics—it was so easy to criticise and so difficult to act. Lord Gifford was a very good and able critic before he came on the Council, and he was a critic himself forty years ago, and thought he could see ways of managing which the Council would not see. But both Mr. Gifford and he had found out, when they reached the Council, that they were tied in every direction by Acts of Parliament. But he must not be taken to say that, although Mr. Lord Gifford was a strong critic before he got on the Council, he was not also a very strong critic now that he was inside the tabernacle. But the Council welcomed criticism, and if they had not yet seen how some of the ideas put forth would turn out, yet if Mr. Gifford could show them that everything he proposed was for the good of the craft they would gladly fall in line. He did not wish people in Blackburn to think that if Mr. Gifford did not now say quite so much as he did before he got on the Council he was not doing his duty. On more than one occasion he had said that chemists required to be perfectly sure that they deserved to get more than they did. He had been much struck while travelling up and down the country to see how very largely members of their craft stood in their own light. When he saw the enormous amount of quack remedies sold by everyone, not only chemists, but grocers and shopkeepers, he thought chemists lent themselves far too readily to the distribution of such things. They had an excellent name if they only lived up to it, but they gave themselves away when they lent their names—and testimonials, as he regretted to see some did—to the most outrageous quack remedies. He repeated that they did themselves and their craft great harm when they lent their pharmacies and good names to the distribution of those things, especially the wretched things that were so largely advertised for the cure of all female complaints. He admitted that it would be difficult for many to live on pure pharmacy and dispensing, but surely there were other ways of maintaining an existence preferable to lending their names to some of those wretched quackeries. Another point was that it had been said to them by members of Parliament that they were more or less a trade union, trying to get the sale of all these articles and drugs into their own hands. He had on all occasions denied that; but there certainly was a feeling among members of Parliament that there was danger of the Society developing into a trade union. He did not want that notion to gain headway. He did not want the public to get the idea that the object of one chemist was to make business for another, like Ruskin's plumber; but chemists ought to take the distribution of poisonous articles from the hands of people who did not know what they were dealing with, because the principal object of those who had to do with the passing of the 1868 Act was to place responsibility for the handling of those dangerous articles upon the shoulders of a body of men specially fitted by their education to deal with them. Before very long some legislation would probably be suggested in the direction of removing the restrictions on the sale of poisons. The Privy Council were now considering whether the Pharmacy Act might be amended by the introduction of another schedule, to include certain of the less dangerous acids and poisons, which might be sold by other persons than chemists. He did not think it at all desirable that there should be a third schedule, for in his opinion it was already sufficiently easy for the public to obtain poisons. There was no doubt a great deal to be said why such things should be more carefully sold, but surely the 16,000 chemists of the country were sufficient to sell all the poisons required, and he hoped the good sense of the Committee would lead that body to say so. But great pressure was being brought to bear on the Privy Council to see if some of the more dangerous acids and poisons, such as arsenic, might not also be put into a third schedule and sold in labelled and sealed packages, like patent medicines. It was a very absurd proposal, and it would be a most remarkable thing if the Privy Council Committee adopted it—indeed, if such a suggestion were adopted the Pharmacy Act would be absolutely useless. He believed, however, that the Legislature was finding out that for the public safety all these things should be sold only by people who knew what they were doing.

Mr. C. B. Allen also responded to the toast. He cordially agreed with everything Mr. Newsholme had said upon current pharmaceutical topics, and took the opportunity of advocating the claims of the Benevolent Fund, of which, by virtue of his office as Vice-President of the Society, he was Chairman. That was a phase of the work of the Society of which every member ought to be proud. It was a charity in the broadest sense of the word, purely catholic in its aims, and one to which no one, with either a good or a bad case, applied in vain. Their casual grants had increased in a few years from £500 to £1,000 per annum, besides which they had from forty-five to fifty annuitants. As the work of a comparatively poor craft in relieving its brethren, there was no other body in the kingdom which could point to such good results as that was producing. Chemists were certainly passing under a cloud just now, but he believed that the time would soon come when the craft would emerge from the shadows. It might be that they would have to differentiate, conduct smaller places of business, and not carry on the miscellaneous trade which they necessarily did now. He endorsed most strongly the observations of the President as to the disastrous nature of the trade which a number of chemists were engaged in—selling proprietary medicines other than of their own manufacture. This was fostering a parasitical growth upon pharmacy, which in the end might strangle it absolutely.

Mr. R. Lord Gifford proposed the toast of

Our Guests,

remarking that the North-East Lancashire had always been fortunate in the gentlemen who had attended their annual gatherings, and to whom they were indebted for much encouragement. These gentlemen showed not only by precept, but by example, that chemists had duties to their craft and to the State, as well as to themselves and their families. As to the work of the Council, he admitted it was difficult, but he found his greatest difficulty in getting at it.

Mr. Edward Evans, who replied, said that gathering was almost the only one of the kind he attended, because if he were to accept all the invitations he received from similar gatherings throughout the country he would have to be out more nights than would be good for his health. But he had always taken a particular interest in the North-East Lancashire Association because it was a "live" Association. It had been a criticising Association, and his public career had taught him that the best thing they could have was criticism. What they had really to fear was apathy. In his political career he cared nothing for all the criticism that could be brought to bear upon his party—the greatest evil they had to contend with in matters political, municipal or Imperial, and in matters pharmaceutical, was the enormous amount of apathy they met with. The North-East Lancashire Association had set an example to all the associations in the country, not only by being a "live" Association, but because they had in their midst one of the most active and intelligent of critics. That gentleman had now attained office as a member of the Pharmaceutical Council, and, although his criticism would not be now what it was when he was outside that body, he would still be a critic, although, as Mr. Newsholme had said, he would be none the less welcome for that reason at their deliberations. The difficulties under which they were suffering at present were not altogether peculiar to retail chemists—almost every trade was finding a difficulty in conducting business just now. He alluded merely to the commercial side of the question; but by binding themselves with an Association like that, becoming members of the Pharmaceutical Society, and giving their younger members the benefit of their experience, they became exceptionally qualified not only to successfully meet the demands of the situation, but to receive the reward which would be their due.

Mr. Aspinall proposed

The Medical Profession,

which was supported by Mr. Turvey (Blackpool). The latter gentleman suggested to medical men that they were doing themselves the greatest possible injury by ordering their patients to take proprietary articles instead of prescribing in a straightforward way.

Dr. Ballantyne (Darwen), in responding, said he hoped something would shortly be done in the matter of dispensing. He didn't know a single doctor who took to it kindly, and he would like to see all prescriptions sent to chemists to be made up. On the other hand, it would be desirable that chemists should drop all minor surgery, tooth-drawing, and treatment of wounds, and send such cases to medical men, and then both doctors and chemists would be gainers. Personally, he was simply sinless of prescribing patent medicines, and he didn't know a doctor who was guilty. He should regard it as an insult to the profession to do such a thing. There were many patent medicines which not only did no good, but were positively harmful, and when chemists ceased selling them the good time the Vice-President of the Society anticipated would soon come about.

Dr. Aitken having also replied,

Mr. G. F. Merson, F.C.S., proposed

The North-East Lancashire Association.

Mr. G. B. Pickwith (Hon. Secretary), in reply, said they were justified in claiming that they were one of the most prominent local associations in the country. The presence of the President and Vice-President of the Society was an encouragement to them to stick to their guns. It was their desire to see every member of the trade in the district a member of the Association, and they tried to enforce the argument that nobody had a right to criticise the Pharmaceutical Society until they became members of it. They would, however, like to have a little more guidance and hope from the Council. It was almost compulsory for young chemists striving to make ends meet to keep in stock everything in demand, and therefore, although they might not like selling patent medicines, yet if they could in this way get people to come to their shops, they were bound to do it. If the Council could give them no hope of a Bill to give them what they had a right to demand, having passed the examinations of the Society, then they would have to look out for themselves. At present there were many of them who were simply handicapped by being chemists and druggists, with whom it was not quite proper to compete for trade in the same spirit as the stores. But they hoped that the Pharmaceutical Council would secure for them the sole right to use the title chemist and druggist and the sole right to sell poisons. They did not ask that a whole list of drugs should be made over to chemists, but simple the little bit of right which they maintained the Act of 1868 gave to them.

A musical programme was contributed by Messrs. Berry, Beckett, Higham, Shorrock, and Hindle.

HUDDERSFIELD CHEMISTS' ASSOCIATION.

The inaugural dinner of the Huddersfield and District Chemists' Association was held on February 26, at the Queen's Hotel, Huddersfield. A company of over forty partook of an excellent repast. The President of the Society (Mr. R. G. Walshaw) presided, and amongst those present were Mr. G. T. W. Newsholme (President of the Pharmaceutical Society), Mr. W. S. Glyn-Jones, Mr. F. W. Branson (of Leeds), and representatives of the Bradford, Halifax, Dewsbury, Sheffield, and Wakefield Associations.

Mr. R. Cuthbert, of Huddersfield, proposed the toast of

The Pharmaceutical Society,

and made feeling reference to the great credit which the late Mr. William Martindale had brought upon the pharmacists of the country, and spoke in most eulogistic terms of the services Mr. Newsholme had rendered to the craft. He urged the importance of cultivating the professional in pharmacy.

Mr. Newsholme replied to the toast, commencing with a sympathetic reference to the death of Mr. William Martindale. He said he wished to take that, his first, opportunity at a general meeting of chemists, of referring to the late Mr. Martindale. He esteemed Mr. Martindale very highly both as a man and as a friend. There was no kinder-hearted man ever lived than Mr. Martindale. Mr. Martindale believed thoroughly in the principle that every man was a debtor to his profession. He was reminded that day, on passing through St. George's Square, in Huddersfield, and seeing the statue of Sir R. Peel, of certain words which he remembered were upon that statue. The words were, if his memory served him right, "It may be that I shall leave a name sometimes remembered with expressions of goodwill in the homes of those who have to earn their bread by the sweat of their brow." Mr. Martindale might well have said, "It may be that I shall leave a name behind me remembered in the homes of the pharmacists, not only of this country, but of the world." Those who were in closest association with him would remember that the service which he rendered to pharmacy would be a service to all the world. Continuing, Mr. Newsholme said that he, like Mr. Cuthbert, attached the greatest importance to the cultivation of the professional side of the craft. The first thing necessary for that purpose was that education should be put in the front rank. The need of education had been recognised by the Government in framing the Pharmacy Acts, and it would be well if, instead of blaming the Pharmaceutial Society for paying so much attention to education, chemists would recognise the importance of the matter more generally. It was their position as educated men only that would enable them to resist such proposals as are now being put before the Poisons Committee.

The dangerous proposition was made that under certain conditions of selling, anybody could sell poisons. Possibly it might be necessary at some future time to call upon the chemists of the country to make efforts in resistance to such preposterous proposals, but the great point was that their case for restriction was largely based upon the educational qualification. He was glad to welcome every addition to the number of the associations, because he always found that when an association was founded, before long the chemists who were members of it became members of the Pharmaceutical Society. The Pharmaceutical Society was not increasing its membership as rapidly as it hoped to do, and he should not be satisfied until there were many more members. Was it not remarkable that out of the 16,000 chemists in the country only about 6,000 were connected with the Pharmaceutical Society? He hoped that it was scarcely necessary to assure them that the members of the Council of the Society did not ask for a larger membership in order that they might derive some benefit for themselves. It was a fact that they were sufficiently altruistic to desire to do good to other people. They knew what the Pharmaceutical Society could do with its present membership. Could they realise what the Society would be able to do if it had every registered chemist in the country at its back? The chemists of the country had the future of the Pharmaceutical Society in their own hands. Chemists should remember that this was a society which was charged with important official and public responsibilities in regard to the craft. Locally, chemists should try to get into touch with the educational institutions of the district. There was no doubt that when the time came for a compulsory curriculum, some arrangements would have to be made with private schools as well as university colleges. Every school ought to be recognised which would carry out the standard of education established by the Society. At present it was of very little use for local societies to establish classes, because of the great difficulty of finding students for these classes. Until there was a curriculum no proper and satisfactory schools were possible. In conclusion, he wished every prosperity for the Association in the town in which he had served his apprenticeship.

Mr. GLYN-JONES, in proposing the toast of

THE HUDDERSFIELD AND DISTRICT CHEMISTS' ASSOCIATION,

said local associations were of personal benefit to their members, not only because of the better feelings which they engendered, but for reasons which some might consider as being of a more practical character. Time was, for instance, when if a chemist was brought before local magistrates, he stood entirely alone upon his defence. Nowadays, if the accused had good cause for defence, he was accompanied to the court by a number of his colleagues, many of whom would be prepared to give evidence in his behalf if need be, and, of course, his position was enormously strengthened thereby. Huddersfield had been wise, too, in recognising that in regard to broader issues there was coming a time when the influence of local associations would be needed. The District Secretaries of the Pharmaceutical Society were very capable and energetic, but no one man could bring to bear upon the local members of Parliament such influence as a body of men could. He had not much fear of the findings of the Poisons Committee which had been appointed by the Privy Council; nothing would please him better than that the whole question of pharmacy should be fought out on the floor of the House of Commons, for he believed that such a discussion would be all to the benefit of the chemists. There were, however, dangers ahead, and for that reason he was pleased that the number of local associations was multiplying rapidly, because that increase was good for the strengthening of the influence of the Pharmaceutical Society.

Mr. S. STEPHENS responded on behalf of the Association, and other toasts were the subjects of speeches by Mr. F. W. Branson (Leeds), Mr. R. W. Silson (Bradford), Mr. J. Rhodes (Mirfield), Mr. J. W. B. Johnson (Huddersfield), and the President.

BRADFORD CHEMISTS' ASSOCIATION.

The members of the Bradford and District Chemists' Association assembled in large numbers at the Royal Hotel on Tuesday, February 25, for the purpose of listening to an address by Dr. Symes, of Liverpool, who had kindly consented at short notice to take the place necessarily left vacant by Mr. John Harrison, of Sunderland, by reason of the accident which had befallen that gentleman, and now took as his subject

THE PHARMACIST'S PROGRESS.

Dr. SYMES took a general view of the life of the pharmacist from his entrance into pharmacy as an apprentice to his establishment in business, and dealt with the points which occurred to him as being of interest and importance in relation to this progress. He thought that there was room to complain in the first instance of the character and quality of the general education which the youth about to enter pharmacy received prior to his apprenticeship. It appeared to him that whilst the universities had at length recognised the need of scientific and technological education for the wealthy, and the poor were well provided for in the Board schools, the opportunities for the education of the children of the middle classes were inferior to those which existed before the competition of the Board schools made it difficult for really good middle-class private schools to continue to exist. There should be such opportunities in education that a youth should have no difficulty in producing the recognised "certificate of elementary education," and should be registered as a student of the Pharmaceutical Society before he entered upon his apprenticeship. He thought it important that the youth who entered his apprenticeship, say, at the age of sixteen, should continue the habit of study acquired in school, that the thread should not be broken, and that the qualifying examination should be divided so that as soon as he began he would have before him the necessity of continuing his studies with a view to taking part of the examination at, say, nineteen. He believed that the examination could be divided under the present Bye-laws. In point of fact the examination was at present divided by a few days, and it would be far better that it should be divided by a couple of years or so. He would advise all students to pass through a school of pharmacy. He hoped that if the time came when a compulsory curriculum was adopted, use would be made of the many good schools up and down the country which could be used for that purpose. He hoped also in future to see more people going in for the Major Examination. Some young men thought it desirable to gain experience in a store before going into business on their own account. He protested against this, declaring that that was simply feeding the enemy, and an enemy the importance of whom they would be sure to feel sharply enough later on. He warned the young man about to enter business, too, against a too ready acceptance of the advice that he should adopt "modern business methods," if this meant that he must buy everything ready made, be not too scrupulous about depreciating what other people were selling, and cut prices to such an extent as to sell goods costing 9s. a dozen at 9½d. each. It might be all very well to be content with small profits in other businesses when there was a large turnover, but it was quite a different matter with the chemist with whom the turnover was small and qualification was a necessity. He thought that chemists in general had rather given away their time and experience and individuality in the past, and that if they would look about them they would find opportunity of turning these to profitable account. His experience was that most people were willing to pay a reasonable price for reasonable service. In conclusion he pointed out that the chemist had valuable helps if he availed himself of them. The local associations, the P.A.T.A., and the Trade Protection and Defence Association, all did most useful service for the chemist, and he need hardly say that his view was that every chemist ought to be a member of the Pharmaceutical Society, which dealt with important matters which none of the other societies were strong enough to deal with. He reminded the critics of the Pharmaceutical Society, however, that in dealing with new legislation the Council had always to remember the principle embodied in the preamble of the Pharmacy Act of 1868, and which permeated the clauses of the new Bill which they hoped to bring before Parliament as soon as there was any probability of its passing, contained in the words, "Whereas it is expedient for the safety of the public." That, of course, put certain limitations upon them which they might not observe if they had only trade interests to consider. The appointment of the Poisons Committee he looked upon as a mark of degeneration in the view of this matter by Parliament, because it was an appointment at the instigation of a small number of persons for selfish reasons to see whether it was not possible to break down or weaken the barrier which existed now for the protection of the public, and to permit any huckster to sell poisons under certain conditions. There were plenty of chemists all over the country, and therefore there was not the slightest need for any disturbance of the existing conditions so far as the interests of the public were concerned. They might yet have to put forth some effort in respect of such matters as these, and he had no doubt that when such effort was needed they would have the help of the members of the Bradford Society.

In the course of a discussion which followed, Messrs. Waddington, Silson, Jackson, Marshall, and Mitchell, and the President and Alderman Dunn spoke, and the proceedings terminated with a vote of thanks to Dr. Symes for his address.

CHEMISTS' ASSISTANTS' ASSOCIATION.

A meeting of this Association was held at 73, Newman Street, London, W., on Thursday, February 27, when a few members proceeded to consider what are

The Best Systematic Methods for the Pharmacist.

The President (Mr. J. Wicliffe Peck) was in the chair, and he opened the discussion. His chief points were that systematic methods should be cultivated from apprenticeship onward; that there should be system and method in all that has to be done, whether it be sweeping and dusting in the shop or dispensing prescriptions. Further, that the pharmacist must be conscientious and honest in all his dealings, accurate in every detail, scrupulously clean, and neat. That he ought to make a systematic use of the microscope in examining his drugs, and should also test his tinctures and other preparations as received from the wholesale house in order to be quite sure that they are in accordance with the requisite standards.

Among others who took part in the discussion were Messrs. Tweedy, Matthews, Franklin, Ffoulkes, Lownsbrough, and Latreille, whose remarks may be briefly summarised thus:—That the young pharmacist who commences business on his own account stands the best chance of succeeding if he is systematically polite and obliging to customers, painstaking and accurate in all things, artistic in the matter of window and counter dressing, methodical as regards stocktaking and bookkeeping, and, if apprentices are taken, careful and conscientious in teaching them the art of pharmacy. And in the latter connection it was pointed out that the master who conscientiously tries to teach his apprentices to become good pharmacists by so doing becomes himself a better pharmacist. Among other points brought out during the discussion were the advantage of co-operation in buying proprietary articles and the usefulness of local associations in that respect; the possibility, and the advisability, of pharmacists making their own pharmaceutical preparations, it being asserted that frequently provincial pharmacists gave orders to wholesale houses for preparations which could be made much cheaper with the drugs in stock, the cost of carriage increasing the price of the articles so purchased; and some interesting remarks were made as to the best method of checking the dispensing of prescriptions and of ensuring that the patient gets the correct dose. In this connection the use of plain dispensing bottles was advocated, as against marked bottles, it being stated that most of the marked dispensing bottles were not accurate, and the opinion was expressed that the patient should always be advised to measure the dose by means of a graduated measure. With regard to checking various methods were referred to, some being in favour of the dispensing, copying in book, and labelling being done by one individual, while others favoured the system of dividing the work among three assistants, but all were agreed that every care should be exercised to ensure accuracy. In the matter of wrapping up medicine bottles to send out, it was suggested that two wrappers should be used, the outside wrapper being intended to receive the impress of the errand boy's fingers, while the inner wrapper might be of transparent paper, so that the directions could be read through it.

The President having announced that a letter had been received from Mr. Ransom enclosing forms for the nomination of members of the British Pharmaceutical Conference, the meeting terminated.

BARNSLEY CHEMISTS' ASSOCIATION.

At a well-attended meeting of the Barnsley and District Chemists' Association, held on Thursday, February 27, at the Royal Hotel, Barnsley, an interesting discussion on

The Social Status of the Chemist

was opened by Mr. J. P. Norwood, who said:—Probably the average chemist has too little leisure to bother about his social standing; the fact that he is not invited to dine with the Vicar or to Lawyer A.'s card party does not trouble him in the least, even though the wife of his bosom does not look upon it with the same indifference. That he is classed socially as a tradesman and not as a professional man is, I think, beyond dispute, however much we may regret it. But is the chemist entitled to consider himself the social equal of the clergyman, lawyer, doctor, or even vet.? This naturally raises the question, What is the difference between a trade and a profession? and it is one which I will not attempt to answer. The mere buying and selling of goods, whether across the counter or otherwise, does no more define a trade than does the exercise of skill and knowledge constitute a profession. The barber, the cabdriver, and also the sweep talk about "our profession." Is it for this, too, we strive? Self-advertisement has a great influence on the social status of the individual, and is in inverse ratio to it. Socially speaking, the doctor who does not advertise has a higher standing than the chemist who does. Of course there is a wide range in our own ranks; much depends upon the individual himself. The free and easy man who is "hail fellow well met" with every person who enters his shop, and who so far forgets himself as to exchange ribald badinage with female customers, need not be surprised if he is looked at askance by the more refined residents of his particular locality, whilst the supercilious individual who serves "a pennyworth of hair oil" with an air of condecension and who bows and scrapes to the parson's wife, is beneath contempt. To associate with gentlepeople one must at all times conduct one's self as a gentleman. Given, then, a gentleman in the true sense of the word, by virtue of his preliminary education, his apprenticeship, his scientific training and qualification, along with the conscientious fulfilment of his duties to the public, which at times are in direct opposition to his pecuniary benefit, the chemist is entitled to rank as the social equal of any man who has not graduated at a university, even though between whiles he has to mix a pound of paint, retail photographic goods or other side-lines of a commercial nature. How is it that the chemist of to-day is not regarded with the same respect as his predecessors? Can it be possible that his position in the social scale becomes lower as his term of apprenticeship shortens. Originally of seven years' duration, each decade sees a tendency to shorten the years of apprenticeship, and the youth of to-day also expects to draw a salary and generally to place himself on the same level as the grocer's boy. For this unhappy state of affairs the master is to blame, for instead of faithfully and consientiously training his apprentice as of yore, he has come to look upon the latter as a source of cheap labour, to the detriment of both. Again, the advent of the "Drug Co., Limited," and the ignorant proprietor of the "drug store," who too often is a promoted errand boy, and who has had neither the education nor possesses sufficient brains to pass the qualifying examination, must have a very prejudicial effect against the genuine druggist in the estimation of the public, who only too frequently are unable to distinguish between the host and the parasite, the ass and the ass in the lion's skin.—Messrs. Tomlin, Wood, Billington, Matthew, Nash, and Walker (Lincoln) took part in the discussion.—It was decided to hold the next meeting of the Association on March 20 instead of the 27th.

LIVERPOOL CHEMISTS' ASSOCIATION.

At a meeting of this Association held at the Royal Institution, Liverpool, on Thursday, February 27, Mr. T. F. Abraham, Vice-President, in the chair, it was announced that the members were invited to attend a lecture on "Fragmental Rocks as Records of the Past," to be delivered before the Liverpool Geological Society on March 11 by Canon T. C. Bonney, F.R.S.

Mr. T. H. Wardleworth then exhibited several

Materia Medica Specimens,

including a resin resembling ordinary pine resin obtained from indiarubber, spurious cubebs, *Piper ribesioides*, which had been offered on the London market and which bore a great resemblance to true cubebs, and a specimen of the leaflets of *Cassia auriculata* offered as those of *Cassia aniculata*. Respecting the cubebs, Mr. Wardleworth said that by distilling about 7 lbs. of the fruit Mr. Herbert Evans obtained an essential oil quite different to that of true cubebs, both in odour and yield. The *Cassia auriculata* was mentioned by Bentley in 1852 as being useful for tanning and dyeing leather as regards its bark, which is also used as an astringent in medicine; whilst its seeds could be used in eye affections in the same way as those of *Abrus precatorius*.

The exhibits occasioned considerable interest, and in the discussion which ensued Mr. Cowley mentioned that in applying the acid test to a sample of cubebs about three years old, containing specimens in all stages of growth, he had observed that no matter what the age of the fruit was, it answered to the test whether it were mature or not. He thanked Mr. Wardleworth for his interesting exhibit and equally valuable remarks.—The leaflets shown reminded Mr. Marsden of *Cassia obovata*. When he was inspecting an old sample of Alexandrian senna dating from the year 1868, he found it a perfect treasure trove of adulteration, for it contained seven different sorts of leaflets, not excepting those of *Tephrosia*. He would like to know if the false cubebs gave to the acid test the same reaction as the true did.

The spurious cubebs interested Mr. A. C. Abraham considerably, as they shed some light on the peculiarities of a specimen he had studied some time ago, in which certain of the fruit gave the acid reaction clearly and others did not, which he thought was due to the difference in age. The variation in cubeb oil could be quite reconciled with variation in the age and maturity of the fruit from which it was obtained.

A very feeling reference was then made by the Chairman to the loss sustained by pharmacy throughout the world in the death of

The Late William Martindale,

and he moved that a letter of sympathy be sent to Mrs. Martindale and the family, conveying the Association's deep condolence.

In seconding the resolution, Dr. Symes spoke of the numerous occasions upon which he had had opportunities for estimating Mr. Martindale's sterling worth, both as a pharmacist and as a personal friend.—The regret expressed by the mover and seconder of the motion was shared by Mr. Wardleworth and Mr. Marsden, both of whom added their contribution to the general manifestation of sorrow.

Mr. P. H. Marsden next read a paper on

Röntgen Ray Work in Hospital Practice,

which was excellently illustrated by lantern views.

At the conclusion of what proved to be an exceptionally valuable record of work and experience delivered in an interesting fashion, the Chairman remarked upon the worth of the contribution and felicitated Mr. Marsden both on his work and on his lecture, a vote of thanks being thereupon passed with unanimity, on the motion of Mr. Cowley, seconded by Mr. Shacklady, and supported by Mr. Wardleworth.

CHEMISTS' AND DRUGGISTS' SOCIETY OF IRELAND.

The annual meeting of this Society was held at the Rooms, Garfield Chambers, Belfast, on Wednesday, February 26, when Mr. Cambridge (Carrickfergus) presided, and there was a fair attendance of members. After the minutes of the previous annual meeting had been read and confirmed, the Hon. Secretary (Mr. W. J. Rankin) submitted his report, which gave a *résumé* of the work done during the year.

Election of Officers.

The election of officers and committee was then proceeded with, the following being elected:—President, Sir James Haslett, M.P.; Vice-Presidents: Mr. Thomas M'Mullan, Mr. William Jamison, Mr. John Watson, and Mr. William Doig; Hon. Treasurer: Mr. Samuel Gibson; Hon. Secretary: Mr. W. J. Rankin; Committee: Messrs. Samuel Acheson, Henry Beckhouse, James Brown, James D. Carse, Robert Cambridge, John Frackleton, W. J. Gibson, James Gillespie, Alex R. Hogg, Samuel Hill, Robert A. Jamison, William Lyttle, John M'Clement, J.P., John M'Conkey, Samuel M'Dowell, Thomas W. Reynolds, James Richardson, John H. Shaw, Samuel Sufferin, Jacob Walsh, and John Tosh.

Annual Reunion.

The annual reunion in connection with this Society was held in the Whitehall Buildings, Ann Street, on February 27. There was a large attendance of members and lady friends, and the meeting was an unqualified success. Tea was served at half-past seven o'clock, and several matches were subsequently played on ping-pong tables. Mr. T. Edens Osborne, of Donegall Street, placed at the disposal of the committee a splendid "concert phonograph," from which in the course of the evening a choice selection of songs was heard. Lovers of art and photography were to be found examining the admirable lot of stereoscopic photographs, also kindly lent by Mr. Osborne. Subsequently there was an adjournment to the large hall, where an excellent musical programme was artistically rendered. The evening's entertainment, which was much appreciated by the entire company, reflected great credit upon the Committee, which consisted of Messrs. W. J. Gibson, John Frackleton, Robert A. Jamison, and W. J. Rankin (Hon. Secretary).

PUBLIC AND POOR-LAW DISPENSERS' ASSOCIATION.

At a meeting held in the St. Bride's Institute, Bride Lane, Ludgate Circus, on Wednesday, February 26, the President, Mr. W. Duff, in the chair, the Council reported that it had discussed the resolution passed at the annual meeting, to the effect that steps should be taken to promote the extension of the Association, and had decided that the first step should be the formation of a complete register of all dispensers engaged in public institutions throughout the kingdom.

The President, after a brief reference to the interest taken by the *Pharmaceutical Journal* and other organs in the work of the Association, proposed that a letter of sympathy and condolence be sent to the family of the late William Martindale. This was seconded by Mr. Noad Clark and carried unanimously in silence.

Mr. Welford was then called upon to read a paper on

Dispensing Solutions,

in which he explained how dispensing operations could be expedited by the use of aqueous solutions containing 5, 10, or 15 grains per fluid drachm of the salts required.

An interesting discussion followed the reading of the paper, and a vote of thanks carried with much applause, a very interesting meeting being thus brought to a close.

NORTHAMPTON CHEMISTS' ASSOCIATION.

The monthly meeting of this Association was held on Friday, February 28, Mr. W. McKinnell in the chair.

The Secretary (Mr. F. Cowdery) reported that he had invited the country chemists, who had signified their approval of the proposal, to unite with the Association at a special meeting, but only three of them replied to his invitation, consequently the meeting was not held.

Mr. E. C. Ashford said he hoped the Association would not give the matter up as a bad job, they must try again, for it was very important that the chemists of the county should be federated.

Mr. Adams proposed that the annual dinner of the Association should be held on March 20. Mr. North seconded, and the motion was carried unanimously. At the suggestion of the Chairman it was decided to invite a few old friends and the country chemists, who were in sympathy with them as their guests on this occasion, and a small committee was formed to make all arrangements.

On the motion of Mr. Ingle, seconded by Mr. F. C. Ashford, it was decided to hold the annual meeting on April 4.

Mr. Flinton Harris asked whether the Association could not be instrumental in obtaining universal early closing among the chemists of Northampton, so that they would have the opportunity of getting a little recreation. The Chairman suggested that they should just jot down the trade on Thursday after two o'clock, and then the subject could be introduced at the next meeting and discussed. Mr. Harris acceded to this suggestion, and promised to bring the matter up again.

CARDIFF AND DISTRICT PHARMACEUTICAL ASSOCIATION.

A meeting of this Association was held at the Park Hotel, on Wednesday, February 26, the President, Mr. Robert Drane, F.L.S., in the Chair. A communication from the Secretary of the Federated Local Pharmaceutical Associations came on for consideration, and whilst the members were unanimously in favour of an enforced curriculum, the division of the Minor Examination was considered of such importance that the whole matter was deferred until the next general meeting. It was decided that the local educational movement should be entrusted to the Educational Sub-Committee, who were instructed to deal with various questions "on behalf of the Association" as they arise.

Mr. R. Mumford was nominated for the office of Divisional Secretary of the Pharmaceutical Society.

LEEDS CHEMISTS' ASSOCIATION.

A meeting of the Leeds and District Chemists' Association was held on Friday, February 28, at the Church Institute, Leeds, when a lecture on "Wireless Telegraphy, Radiography and Tesla's High Tension Currents," was delivered by the President, Mr. F. W. Branson, F.I.C. The chair was taken by Mr. W. G. Worfolk, of Ilkley, and there was a large attendance, including a number of ladies.

After explaining at some length, with lantern illustrations, the difference between the waves of sound and light in the ether of space, the lecturer went on to describe those wonderful phenomena known as Hertzian waves and their use in wireless telegraphy. Each phase of this subject was demonstrated by experiments with electrical and other apparatus, an elaborate collection of which was upon the table.

The lecture was listened to with keen attention throughout, and at its close a hearty vote of thanks, moved by Mr. Yewdall, seconded by Mr. Bowman, and supported by the Hon. Secretary, was accorded to Mr. Branson.

EDINBURGH CHEMISTS' ASSOCIATION.

At a meeting of the Edinburgh Chemists', Assistants', and Apprentices' Association, held in the Pharmaceutical Society's House, 36, York Place, Edinburgh, on Wednesday, February 26, Mr. J. G. Sclater, President, took the chair, and

Mr. Peter Boa gave a most interesting lecture on

Fishes and Flowers in Liddlesdale,

describing his experiences as an angler in this interesting and beautiful border country. One of the charms of angling to anyone who had an acquaintance with botany was the opportunities it gave for coming across the characteristic flora of the district. Some of the most beautiful and richest nooks were accessible only to the angler, as they could only be got at by wading. This district was very rich in flowers. The lecture was illustrated by a fine series of slides exhibited by the oxyhydrogen lantern.

Mr. J. W. Plenderleith then explained

How the Minor Examination is Conducted.

He related in detail his experience on a recent occasion when he passed the qualifying examination at Edinburgh, and gave a minute description of the arrangement of the laboratories and the Examination Hall.

Pharmacy and the Allied Sciences

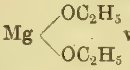
A REVIEW OF CURRENT WORK.

INFLUENCE OF SALT ON PEPPERMINT. From experiments conducted on a growth of peppermint plants, a portion of which was watered with a solution of 500 Gm. of NaCl in 20 litres of water, E. Charabot and A. Hébert conclude that the presence of salt is beneficial, increasing the total percentage of organic matter in the plant, lessening the relative loss of moisture, increasing the percentage of esters in the oil obtained from the plants, and hindering the transformation of menthol into menthone. —*Comptes rend.*, **134**, 181.

SELENIUM HYDRIDE. De Forcrand and Fonzes Diacon obtain H_2Se perfectly pure by the action of water on aluminium selenide, and if the latter be in excess, the gas is slowly evolved free from moisture. Thus obtained it boils at −42° C., and a little below −40° C. condenses to a colourless liquid which solidifies at −64° C. The density of the gas at −42° C. is 2·12. It is very soluble in water, 3·31 volumes dissolving in one volume of that liquid at normal atmospheric pressure at 13·2° C., 3·77 volumes at 4° C., and 2·7 volumes at 22·5° C.—*Comptes rend.*, **134**, 171.

PHELLANDRENE NITRITE. Oswald Schreiner finds that the so-called phellandrene nitrite obtained by treating phellandrene-containing oils with acetic acid and sodium nitrite is often not a simple body. By recrystallising the solid nitrosite of a eucalyptus oil from cold methyl alcohol, two crystalline nitrosites were separated. One of these melted at 120-121° C. and gave a rotation in chloroformic solution of $[\alpha]_D = +123{\cdot}5°$; the other, occurring in brilliant needles melting at 105-106° C., and gave a chloroform solution which had the specific rotation $[\alpha]_D = -36°$. The melting point of phellandrene nitrosite of other authors is given as between 94° and 105° C. The nitrosites isolated by the author from ginger oil were also separable into three distinct crystalline bodies by fractional crystallisation from hot methyl alcohol or ethyl acetate; zingiberene nitrosite melting at 97-98° C.; phellandrene nitrosite melting at 120-121° C., and a third nitrosite melting at 105° C., which has not yet been identified.—*Chem. Centralb.*, **72**, 544.

COMPOSITION OF ANTIQUE OBJECTS. Berthelot has obtained some interesting results, which throw much light on the knowledge of metallurgy of the ancients. A Chaldean statuette about 2,600 years old was found to consist solely of an alloy of four parts of copper, and one part of lead, with a little sulphur. This shows a totally different composition from that of statuettes of later date, about 2,200 years old, which consist of practically pure copper, containing no lead, and only a trace of iron. A Babylonian statuette of unknown antiquity consisted of an alloy of copper, 79·5, tin, 1·25, and iron, 0·8 parts. The pedestal of a Babylonian bull was found to consist of copper, 82·4, tin, 11·9, and iron, 4·1 parts. An object of white metal of Hittite origin proved to be silver. A substance derived from the tomb of Abou Roash of the fourth dynasty, and supposed to contain silver, consisted of a mixture of argillaceous matter mixed with lead chloride, was free from silver, and was doubtless derived from a leaden object which had been, for centuries, in contact with brackish water.—*Comptes rend.*, **134**, 142.

MAGNESIUM ETHYLATE. By the action of absolute ethylic alcohol, in the cold, on magnesium amalgam, L. Meunier has obtained magnesium ethylate,  $Mg\langle^{OC_2H_5}_{OC_2H_5}$ which, when washed with anhydrous ether and quickly dried on a porous plate, forms a white amorphous powder, which possesses properties analogous to those of the alkaline ethylates. With ethylic aldehyde magnesium amalgam reacts with great violence, but if the action be moderated by diluting the aldehyde with anhydrous benzene or anhydrous ether a syrupy liquid is obtained, which, when boiled with aqueous alcohol, precipitates gelatinous magnesium hydrate; on filtering this off and distilling the filtrate a fraction boiling at 185° C. is obtained, which is β-γ-dioxybutane—

$$CH_3-CHOH-CHOH-CH_3.$$

—*Comptes rend.*, **134**, 473.

CASTOR OIL CAKE. Owing to the presence of a poisonous albuminoid, ricin or ricinin, this oil cake, or castor pomace as it is called, is unfit for feeding purposes. The albuminoid is soluble in a 10 per cent. cold solution of sodium chloride in water, and is precipitated on boiling. Based on this fact, Oscar Nagel proposes a method of purification whereby the cake may be fitted for feeding purposes. The powdered castor pomace is mixed with six or seven times its weight of 10 per cent. salt solution, and allowed to stand for six or eight hours, during which time it is thoroughly stirred. The mass is filter-pressed and washed with more of the salt solution until all the albuminoid is removed, as shown by the absence of a precipitate on boiling a little of the solution in a test tube. The cakes are then removed from filter-press and dried. It is an interesting physiological fact that ricin, which has such a poisonous effect on man, is quite harmless to chickens.—*Journ. Soc. Chem. Ind.* **21**, 30.

FLORAL ANOMALIES. Some curious variations in the floral structure of *Hemerocallis fulva*, L., an ornamental liliaceous plant, have been described by Lamarlière. The chief modifications observed were:—(1) The more or less complete abortion of sepals or stamens; (2) the total or partial conversion of petals into stamens; (3) fusion of sepals together or with petals, of petals with stamens, and of stamens with each other or with the style; and (4) a disposition for the members of the various whorls to become spirally arranged. In some respects certain of these anomalous flowers showed a very marked approach to the structure of certain Scitamineæ, *e.g.*, *Canna*.—*Bonnier's Revue Gen. de Bot.*, **13**, 337.

INDIARUBBER PLANTS OF MADAGASCAR. Jumelle has investigated the indiarubber plants of Madagascar, and finds all to belong to the genera *Landolphia* and *Mascarenhasia* in Apocynaceæ and *Marsdenia* and *Cryptostegia* in Asclepiadaceæ. Each species yielding caoutchouc is very fully described in its external morphology, its internal anatomy, and in the character of its latex. He finds the indiarubber yielded by the *Landolphias* to be pink in colour, of low specific gravity, with but little admixture of resins (6·8 per cent.), and very free from mineral substances. From the *Mascarenhasias* the indiarubber is black, of high specific gravity, very free from resin (3-5 per cent.), and has a larger amount of mineral admixture. The caoutchouc from *Marsdenia* and *Cryptostegia* is very inferior. The latex of *Mascarenhasia lisianthiflora* contains 40 per cent. of caoutchouc, of *Landolphia sphærocephala*, 20 per cent., and of *L. perrieri* about 10 per cent.—*Bonnier's Revue Gen. de Bot.*, **13**, 289.

LIQUID EXTRACT OF COCA.*

BY W. GARSED,

Salters' Company's Research Fellow.

In a previous paper by Professor Collie and myself dealing with the determination of cocaine (*Pharm. Journal*, August 10 and 17, 1901), the assay of three different samples of liquid extract of coca was described, and attention was called to the fact that the percentage of alkaloid varied considerably. The actual amounts found in 100 C.c. of the respective liquid extracts were 0·15 Gm., 0·03 Gm., and 0·25 Gm. Since then fourteen other specimens, obtained from various manufacturing houses in London and the provinces, have been examined. They include seven samples of the B.P. article, and seven of the "miscible" preparation.

The B.P. Extracts.

These are all distinctly acid to litmus, have a deep brownish-green colour, and, with the exception of No. 6, which is more fragrant than the rest, are similar in odour. They all deposit slightly on standing, Nos. 4 and 5 more so than the others. Several of these deposits were tested for alkaloid, but found to contain none.

"*Assay Process.*"—In the method previously described alcohol was removed by evaporating the extract to half its bulk on a water-bath; the residue was diluted to its original volume with distilled water, and allowed to stand for a short time to deposit, after which the supernatant liquid was poured from the green coagulated resinous matter, the solution and the deposit being separately examined. It was found, however, that this resinous matter was very largely soluble in dilute ammonia, and by making alkaline with ammonia after the dissipation of the alcohol, a solution fairly free from clotted matter could be obtained, and at once extracted with ether.

It was shown in the paper referred to that the heat necessary to drive off the alcohol did not appear to injure the alkaloid in any way. The following process then was adopted for all the B.P. extracts:—

100 C.c. was evaporated to half the bulk in a shallow dish on a water-bath, at a temperature never exceeding 80° C., with constant stirring, to get rid of alcohol (this never took more than fifteen minutes). When cold, the concentrated extract was made alkaline by the addition of 5 C.c. of 10 per cent. ammonia, and transferred to a separating funnel. The dish was washed out first with 45 C.c. of distilled water, then with 100 C.c. of ether. The water and ether washings were added to the rest in the separator, the whole well shaken, and allowed to stand until the ether separated, when the alkaline liquid was drawn off. The extraction with ether was three times repeated. Four ether solutions were thus obtained. The first three were mixed together, washed with a few C.c. of water containing a little ammonia, and shaken out first with 5 C.c. of 5 per cent. sulphuric acid, then twice with 5 C.c. of 1 per cent. acid. This was generally found sufficient to completely exhaust the ether solution, the test being the addition of a few drops of Mayer's reagent to the last few drops of the third quantity of acid, when, as a rule, no precipitate or opalescence was produced. The three acid solutions were mixed together, made alkaline by the addition of 10 per cent. ammonia, and three times shaken out with 10 C.c. of petroleum ether, then once with 10 C.c. of ordinary ether. The three petroleum ether solutions were mixed together and evaporated to dryness on a water-bath in a tared dish, which was then placed in a desiccator for some hours, and afterwards weighed. The weight of alkaloid thus obtained is the weight given in the table. The ether solution was separately treated, in a similar manner, and the weight of the residue obtained. Petroleum ether was chosen for this final extraction, because it dissolves out much less colouring and inert resinous matter than ordinary ether, and thus yields a purer alkaloid. The ether residues were all of a brown or brownish green colour, and as a rule did not exceed two or three milligrammes in weight, but in the case of B.P. extracts Nos. 5 and 6 the weight was 0·03 Gm. and 0·015 Gm., amounting to 16 per cent. and 3·6 per cent. respectively on the figure for total alkaloid given in the table. These residues, however, were not alkaloid, but seemed to be of a resinous nature; they were insoluble in dilute acid, practically tasteless, soluble in ether, but insoluble in petroleum ether. Hence the advantage of using the latter solvent for the final extraction previous to evaporation and weighing. The question now arose: Has three times shaking with ether completely exhausted the extract? In all probability it has; but to make sure the fourth ether solution was treated in a manner similar to that described above, but the residue never exceeded one or two milligrammes in weight, proving the exhaustion to be already practically complete.

The Miscible Extracts.

These vary in colour from deep brownish red, opaque in an ordinary test-tube, to reddish brown, just transparent in an ordinary test-tube. They are all distinctly acid to litmus, and all deposit considerably on standing.

Mixed with an equal volume of rectified spirit they all deposit mucilaginous matter, and when shaken with ether the latter after separation is scarcely coloured, proving the absence of chlorophyll, etc. Judging from the quantity of mucilaginous matter present, and from the fact that when shaken with ether the latter is not coloured green, it appears probable that these "miscible" extracts are made by percolation with water, acidulated water possibly, a small quantity of alcohol being probably added afterwards as a preservative.

"*Assay Process.*"—The method of assay was similar to that used for the B.P. preparations, except that no evaporation was necessary, the extract being at once made alkaline with ammonia, and then four times shaken out with an equal volume of ether, the ether solutions mixed together, extracted with diluted acid, the acid solutions mixed, made alkaline, and extracted first with petroleum ether, and then with ordinary ether. Here again the figures on the chart represent the alkaloid obtained from the petroleum ether solution. The amount contained in the ether solution never amounted to more than a milligramme or two. No attempt was made to extract and weigh the alkaloid from the fourth ether solution, which was merely shaken out once with 5 C.c. of 1 per cent. acid, and the acid solution at once tested with Mayer's reagent, which never gave more than an opalescence, showing the extraction to be already complete. On referring to the chart it will be seen that in both classes of extract the alkaloidal value varies considerably, ranging from 0·200 Gm. to 0·816 Gm. in 100 C.c. in the B.P. preparations, the mean being 0·38 Gm., and from 0·014 Gm. to 0·294 Gm. in the miscible ones, the mean being 0·091 Gm. The average strength of the miscible extracts is only about one-fourth that of B.P. preparations. Whether this is due to the method of manufacture whereby the leaves are incompletely exhausted, or to subsequent decomposition of the alkaloid, is uncertain, but the former alternative appears the more probable one. It is evident then that the dispensing of the miscible liquid extract in preference to the B.P. one means, as a rule, the sacrificing of efficacy for the sake of elegance, on the justifiable assumption that the therapeutic value depends on the alkaloidal value. In all cases the alkaloid was at first viscous, but in a period varying from a few hours to a few days, or even longer, spontaneous crystallisation set in, and gradually extended throughout the whole mass. Of course, this alkaloid is not pure cocaine, but probably contains small quantities of truxilline and cinnamyl cocaine in addition; it does not, however, contain benzoyl ecgonine or ecgonine; these substances are very soluble in aqueous liquids, and are not extracted by ether.

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*Communicated to the Pharmaceutical Society of Great Britain, at a meeting, held in London, on Tuesday, March 11, 1902.

GRAMMES OF TOTAL ALKALOID IN 100 C.C. OF LIQUID EXTRACT OF COCA.

Number of Sample.	B.P. Extracts.	Miscible Extracts.
1.	0·816	0·014
2.	0·386	0·154
3.	0·368	0·026
4.	0·252	0·048
5.	0·200	0·294
6.	0·400	0·048
7.	0·240	0·054
Average.	0·380	0·091

THE PRESERVATION OF SOLUTION OF MERCURIC CHLORIDE.*

BY HENRY GEORGE GREENISH, F.I.C.
Professor of Pharmaceutics to the Pharmaceutical Society of Great Britain,
and
F. A. UPSHER SMITH.
Demonstrator in the Research Laboratories of the Pharmaceutical Society of Great Britain.

Some time ago we were requested by the Council of the Pharmaceutical Society to inquire into the change, if any, which solution of mercuric chloride undergoes according to the nature of the bottle in which it is kept.

The subject, upon consideration, divided itself into the following questions:—

1. Does the solution of mercuric chloride of the British Pharmacopœia undergo any change when kept?
2. To what extent is such change, if any, influenced (*a*) by the nature of the bottle in which the solution is kept; (*b*) by the nature of the light to which it is exposed; (*c*) by the nature of the solvent?
3. What is the nature of the change, if any?

The question of the presence or absence of ammonium chloride did not receive our attention, partly because it has now been omitted from the official solution, and, for the rest, because it has been sufficiently dealt with by the late Mr. Martindale in the papers cited below.

It is of interest to note the changes through which the solution of mercuric chloride has passed since first it was made official. It was first introduced into the London Pharmacopœia of 1809 as liquor hydrargyri oxymuriatis, the solution containing 8 grains of the salt in a mixture of distilled water, 15 fluid ounces, and rectified spirit, 1 fluid ounce. The next edition of the London Pharmacopœia, issued in 1824, contained the same formula The solution appeared in the 1836 edition as liquor hydrargyri bichloridi, and contained 10 grains each of mercuric chloride and ammonium chloride per pint of distilled water; the same formula was given in the 1851 edition. The first British Pharmacopœia, which appeared in 1864, omitted the solution altogether, but in the 1867 British Pharmacopœia it again appeared under the name liquor hydrargyri perchloridi, with the same formula as that of the Pharmacopœia Londinensis of 1836. The 1885 British Pharmacopœia repeated this formula, but that of 1898 gave it in an altered form by omitting the ammonium chloride.

At the outset reference was made to the literature of the subject, and two papers by the late Mr. William Martindale were found. In the first paper[1] the solution of the 1868 Pharmacopœia, containing ammonium chloride, was dealt with; the statement occurs that a simple solution (of mercuric chloride) in distilled water is quite stable. In the second paper[2] Mr. Martindale repeated this observation, and pointed out that even in the case of spring waters, containing supercarbonate of lime in solution, the solution is more stable than it is with a preservative, especially one of such a nature as ammonium chloride.

We accordingly, on July 23, 1900, prepared a quantity of solution of mercuric chloride of the official strength, and exposed it under various conditions. The intensity of light was varied by placing some of the bottles selected in a dark cupboard, seldom opened; others in diffused light, such as prevailed in the laboratory provided with frosted windows; and the remainder in a strong light, this was effected by placing the bottles in a window with a south-west aspect, so that they were exposed to a maximum of direct sunlight. Bottles were procured of different colours—viz., ordinary white shop rounds, from Messrs. Maw, Son and Sons; ordinary dark blue poison bottles, ordinary "actinic" green poison bottles, and the yellowish brown (amber) glass bottles commonly used for bottling extract of malt. The character of the water was varied by using distilled water, recently boiled and cooled water, and tap water.

Further variations in the choice of glass will be described later in the paper. The following is a brief account of the results after the solutions had been exposed to the various conditions named for nine months—viz., until March 21, 1901.

INFLUENCE OF THE NATURE AND INTENSITY OF THE LIGHT.

WHITE GLASS BOTTLES.

Amount of deposit, if any, after nine months.

	Distilled Water.	Recently Boiled and Cooled Distilled Water.	Tap Water.
Diffused Light ..	Slight	Minute	Copious, white
Strong Light ...	Slight	Slight	Copious, white
Darkness	Minute	None	Minute

The term "slight" is intended to express the presence of rather more deposit than the term "minute."

This table shows the following points:—

Distilled Water. Even after keeping for nine months that which had been kept in a dark cupboard contained but a minute deposit, that kept in diffused light and in strong light deposited slightly more, but all these solutions were judged to have kept satisfactorily.

Recently Boiled and Cooled Distilled Water. These solutions kept slightly better, except in strong light, in which the deposit was rather more distinct than it was in the corresponding distilled water experiment.

Tap Water.—These solutions under the same conditions gave a copious deposit except when kept in the dark; in this case only a minute deposit had formed. Bottles of tap water without mercuric chloride were similarly treated, and gave practically no deposit.

These deposits were, as a rule, so minute in quantity that we could find no satisfactory method of comparing them except by pouring the liquids, after well shaking, into thin glass beakers standing on black paper, and judging the relative amounts of deposit formed. The method gives sufficiently satisfactory results, which are, however, only approximate

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* Communicated to the Pharmaceutical Society of Great Britain, at a meeting held in London on Tuesday, March 11, 1902.

[1] *Pharmaceutical Journal* [2], **11**, 547.

[2] *Pharmaceutical Journal*, [4], **4**, 228.

It will be seen that in the case of white glass a distilled water solution keeps well in any light, but a tap-water solution must be protected from the light.

Blue Glass Bottles.

Amount of deposit, if any, after nine months.

	Distilled Water.	Recently Boiled and Cooled Distilled Water.	Tap Water.
Diffused Light	Minute	Minute	Copious
Strong Light	Slight	Slight	Copious
Darkness	Minute	Fairly copious	Minute

Distilled Water.—The deposit in strong light was rather more than we considered satisfactory. In diffused light or darkness there appears to be but little change in the solutions kept in blue glass bottles.

Recently Boiled and Cooled Distilled Water.—In diffused and strong light this solution keeps as well as a plain distilled water solution, but we obtained a fairly copious precipitate in darkness. We are unable to give any reason for this last result.

Tap Water.—The same as with distilled water in darkness, but a copious precipitate in diffused and in strong light.

Actinic Green Glass Bottles.

Amount of deposit, if any, after nine months.

	Distilled Water.	Recently Boiled and Cooled Distilled Water.	Tap Water.
Diffused Light	Minute	None	Copious
Strong Light	Slight	Slight	Copious
Darkness	Minute	Fairly Copious	Minute

The same remarks apply here as to the blue glass bottles. It is noteworthy that tap water gives practically no precipitate in the dark, whilst in diffused light or sunlight a copious precipitate is formed. In darkness recently boiled distilled water again gave a fairly copious deposit.

Amber Glass Bottles.

Amount of deposit, if any, after nine months.

	Distilled Water.	Recently Boiled and Cooled Distilled Water.	Tap Water.
Diffused Light	None	None	Minute
Strong Light	None	None	Minute
Darkness	Minute	Minute	Minute

Distilled Water.—In diffused light and strong light free from any deposit; in darkness a minute deposit was obtained.

Recently Boiled and Cooled Distilled Water.—Same as distilled.

Tap Water.—Minute deposit in all. It is remarkable that even in strong light tap water gives only a minute deposit with mercuric chloride if the solution is kept in amber bottles.

These experiments agree with the results arrived at by Moeller[3], who recently made a careful inquiry into the influence exercised by bottles of various colours in keeping different solutions. Amongst others, Moeller experimented with a solution of mercuric chloride to which oxalic acid had been added. He found that black, red, orange, and dark yellowish brown glass bottles were most efficient in protecting the mercuric salt from reduction; that brownish-yellow, pure dark green, and dark brownish-green protected well; but that bluish-green, blue, or white afforded little or no protection. In view of the agreement between Moeller's results and our own, we have not thought it necessary to make further investigation into the choice of the colour of glass.

We thought it, however, desirable to ascertain whether there were any differences between white glass bottles of English, German, and French manufacture in their action on mercuric chloride solution. We therefore prepared another solution of mercuric chloride in distilled water on May 9, 1901, and exposed portions, in English, German, and French white glass stoppered bottles, such as would be used by pharmacists, to diffused daylight on the laboratory table, thus reproducing as nearly as we could the conditions that obtain in a pharmacy. At the end of about two months a slight deposit had formed in each, as is shown in the table. Check experiments were also set on, side by side with the others.

Comparison of White Glass Bottles.

Deposit, if any, after about two months:—

	Distilled Water with Mercuric Chloride.	Distilled Water alone.
English	Slight	None
German	Slight	None
French	Slight	None

The deposit was much too small to be weighable, and quite insufficient to produce any appreciable reduction in the strength of the solution. As far as the eye could judge, the amount of deposit was the same in each case.

This experiment tends to show that such differences as exist in the manufacture of the various kinds of glass used do not cause any appreciable difference in the change that occurs in solution of mercuric chloride kept in them. It also confirms the previous experiments in showing that a distilled water solution of mercuric chloride, kept in white glass bottles exposed to diffused daylight, only very slowly undergoes change.

Nature of the Change.

The deposit in solutions prepared with distilled water, or recently boiled and cooled distilled water, consists of minute and apparently amorphous white flocks. With the aid of a centrifuge, we collected some of this deposit, and washed it free from the supernatant liquid. Examination under the microscope showed it to consist principally of minute crystals, which turned black when irrigated with solution of potash. We were also able to sublime it on to a cover-slip, and the sublimate gave the same reaction. It therefore is mercurous chloride, but the quantity at our disposal was, however, so minute that we were not able to finally determine whether wholly or partly so.

The deposit from tap water is at first similar to that from distilled water, but in tap water large dark ruby or garnet red crystals subsequently form. They appear to be formed in the solution, and to be carried to the surface by minute bubbles of gas. They float on the surface unless disturbed, when they sink to the bottom. Thümmel[4], who investigated the action of potassium and sodium bicarbonates upon mercuric chloride, found that mercuric oxychloride was precipitated, its composition varying with the conditions of the experiment. By long standing mercurous chloride containing mercuric oxide was deposited from solutions of mercuric chloride. He also observed, under certain conditions, the slow formation of minute black crystals on the surface of the liquid; these fell gradually to the bottom. Millon[5] assigns to these crystals the composition $4HgO \cdot HgCl_2$, and Thümmel ascribes their formation to the gradual loss of carbon dioxide by which the bicarbonate is converted into carbonate. The disappearance of bicarbonate is followed by a precipitation of mercuric trioxychloride till then held in solution by the bicarbonate; the carbonate formed converts this into mercuric tetra-oxychloride of the composition indicated. We have tested these red crystals, and have found them to contain mercury, in the mercuric condition, and chloride; but not carbonate.

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[3] *Ber. d. d. Pharm. Ges.*, 1900.

[4] *Archiv. d. Pharmacie*, 1885, p. 918.

To ascertain if the precipitation in tap water was due to bicarbonate contained in it we added to a distilled water solution of mercuric chloride sufficient solution of magnesium bicarbonate to represent the quantity of bicarbonate present in tap water—viz., about 16 grains of magnesium bicarbonate per gallon. French white glass bottles were used, and placed some in diffused light and some in the dark cupboard. The table gives our results after three weeks:—

Effect of Magnesium Bicarbonate on Mercuric Chloride Solution.

	Diffused Light.	Darkness.
Mercuric chloride solution with magnesium bicarbonate	Copious white deposit, not adhering to the bottle	Copious yellowish-white deposit, adherent to the bottom of the bottle
Magnesium bicarbonate in distilled water without mercuric chloride	Slight flocculent deposit	Slight flocculent deposit

We obtained, therefore, exactly the same precipitation as in the tap water solution of mercuric chloride. It is interesting to note, also, that subsequently dark red crystals were formed in both solutions of mercuric chloride in distilled water with the bicarbonate. The decomposition between magnesium bicarbonate and mercuric chloride goes on in darkness as well as in light.

It seemed desirable to try the effect of organic matter on a mercuric chloride solution in distilled water, since possibly traces of organic matter present might bring about a reduction of mercuric to mercurous chloride, just as oxalic acid will. For this purpose 5 C.c. of a 1 per cent. cold aqueous infusion of hay were added to each quart of solution. At the end of three weeks only very slight deposits were observed, as the table shows:—

Effect of Organic Matter on a Distilled Water Solution of Mercuric Chloride.

	Diffused Light.	Darkness.
Mercuric chloride solution with organic matter	Slight deposit	Minute deposit
Distilled water with organic matter, without mercuric chloride	No deposit	Minute deposit

To each bottle we then added, when cold, 5 C.c. of a 10 per cent. hot infusion of hay, but the only effect observed was that the mercuric chloride exercised a preserving influence on the organic matter, the bottles without mercuric chloride showing a larger quantity of green organic deposit than those containing mercuric chloride.

The minute deposit that very slowly forms in distilled water solution of mercuric chloride may possibly be due to the gradual solution of alkali from the glass by the long-continued action of water. It is quite possible that some varieties of glass may yield more alkali than others, but we have not thought it necessary to pursue the investigation further. We have tested five different specimens of white glass bottles, such as the pharmacist would use, and upon the results obtained we base the opinions subsequently expressed in a summary.

The action of light on mercuric chloride solution in glass vessels of different colour may be demonstrated by means of the electric lantern. If the bottles be filled with a solution of mercuric chloride containing, in addition, a reducing substance—*e.g.*, oxalic acid—in the proportion of one part of each substance in sixteen fluid parts, and then exposed to a beam of light from the lantern for a definite time, the effects are readily compared. Thus, after an exposure of three minutes, white glass gave a heavy precipitate, blue or green glass gave a less heavy though considerable precipitate, while no perceptible precipitate was obtained in the case of amber glass. These results are in entire accord with our conclusions based on the experiments we have described, which lasted over a long period.

It is of interest to demonstrate the relative values of glass of different colours by passing a beam of light from the lantern through a prism so as to produce the spectrum, and then interposing strips of glass between the prism and the screen. It is seen that the blue portions of the spectrum are not appreciably affected by passing through blue or green glass (obtained from the bottles previously referred to), but that the blue portions are almost entirely cut off by amber glass.

Summary.

We draw the following conclusions from our experiments:—(1) That solution of mercuric chloride in distilled water will keep satisfactorily in white, green, or blue bottles for a reasonable length of time if not exposed to direct sunlight. (2) That even in direct sunlight it will keep, if protected by the use of amber glass; we, therefore, recommend the use of bottles made of such glass. (3) That the ordinary white glass bottles, whether of English, German, or French manufacture, as sold to pharmacists, do not appreciably differ in their action. (4) That the minute deposit gradually formed is partly or wholly mercurous chloride. (5) That mercuric chloride with tap water gives a copious precipitate in blue, green, or white glass bottles; the precipitate will not form, however, in amber bottles or in darkness. (6) That in diffused light amber bottles preserve the solution better than blue, green, or white bottles. (7) That in strong light the amber glass alone is satisfactory. (8) That strong light effects more decomposition than diffused light, especially with tap water.

PRACTICAL NOTES AND FORMULÆ.

Application for Mosquito Bites.

Formalin, 15, xylol, 5, acetone, 4, Canada balsam 1, perfume, *q. s.* Shake well before applying, touch the bite with the wet cork, and allow to dry.—*L'Union Pharm.*, **42**, 553.

To Cover the Odour of Methyl Salicylate.

According to Petit, the odour of methyl salicylate, which is sometimes objected to when employed in dressings and other applications, may be entirely masked by the addition of 1·5 to 2 per cent. of lavender oil.—*L'Union Pharm.*, **43**, 13.

Vanier's Iodised Syrup of Quinine.

Potassium iodide, 3 Gm.; fluid extract of cinchona, 25 Gm.; fluid extract of bitter orange peel, 5 Gm.; fluid extract of walnut, 50 Gm.; alcohol, 30 per cent., 17 Gm. Dissolve, and to every one part by weight of the solution add nine parts by weight of syrup.—*L'Union Pharm.*, **42**, 534.

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[5] *Comptes rendus*, **98**, pp. 298 *et seq.*

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

EVENING MEETING IN LONDON.

On Tuesday, March 11, the third evening meeting of the session was held in the Lecture Theatre, 17, Bloomsbury Square, London, W.C., the Vice-President, Mr. C. B. Allen, in the chair.

The Vice-President, in opening the proceedings, said the President was on the way to London, but would not be able to take the chair that night. He was sure Mr. Newsholme would have liked to be present, because the subjects to be considered were of a purely pharmaceutical character, and as those present knew, the President was greatly interested in practical pharmacy. The papers to be read were the outcome of research work carried out in the Research Laboratory of the Society. The first paper would be communicated by

Mr. W. Garsed, the Salters' Research Fellow, on

Liquid Extract of Coca.

The paper is printed at page 214. After it had been read,

The Vice-President said they were all very much indebted to Mr. Garsed for his excellent paper. He had brought out one very remarkable fact, viz., the difference in the alkaloidal value of the miscible extracts and the ordinary extract of the Pharmacopœia. The figures showed that it was very necessary in dispensing to use only the preparation that had been prescribed.

Mr. Hills said that, in the conditions under which Mr. Garsed worked, he would probably not be aware of the alkaloidal value of the leaves. It would be interesting to know whether he had prepared the liquid extract according to the B.P., and afterwards determined how much of the alkaloid was in the finished product.

Mr. Naylor said that according to the author the liquid extracts deposited more or less on keeping. He would like to know under what conditions they had been kept. If they had been kept in a very low temperature it was not at all improbable that there would be a deposit. It was very satisfactory to find, however, that no alkaloid was found in the deposit. He was very much struck with the percentage of alkaloid contained in the B.P. extract and in the miscible extract, and he did not think the pharmacist would be disposed to blame the loss in the case of the miscible extract upon the manufacturer. He thought it was extremely probable that the alkaloid in the miscible extract suffered decomposition. So far as he was aware, it was not customary in making miscible extract to percolate with water and afterwards to add a certain proportion of spirit to keep it.

Mr. Upsher Smith suggested that it would be very useful, and would be doing good service to pharmacists generally if someone would publish a method for making the miscible extract.

Mr. MacEwan thought if inquiries were made of the wholesale houses the information required by Mr. Smith might be obtained—not necessarily for publication. The remarks of Mr. Garsed in regard to the ether-soluble alkaloids naturally led to the thought how far in the process of keeping the active alkaloids change into insoluble alkaloids. It was a fact that a very large proportion of coca leaves contain ether-insoluble alkaloids, and a certain amount of the insoluble alkaloids in the course of manufacture was reconverted into cocaine. The point was whether ether-soluble alkaloids in the extract became ether insoluble by keeping. He thought the fact should be emphasised that once in the course of Mr. Garsed's experiments the miscible extract was apparently as potent in cocaine as the B.P. extract. Therefore it would appear that it is quite possible to make a miscible extract equally as potent as the official article.

Professor Greenish said that Mr. Garsed's remarks were most instructive, and not only elucidated some points but also raised a question which had been asked by Mr. Hills and would have to be answered, viz., what is the amount of alkaloid in the coca leaf and in the B.P. extract. It had recently been brought to his notice, not in connection with coca but another drug, how that by certain methods of extraction only about one-fifth of the alkaloid present in the drug was extracted. Looking at the table given by Mr. Garsed, it seemed to him that there was not so much alkaloid in the liquid extract as there should be. The first sample showed 0·8 per cent. of alkaloid, and the next 0·3 per cent. He thought it would be advisable to find out whether the heat employed converted the acid into benzoyl ecgonine. In going through the B.P. somewhat critically, it seemed to him there were a great many processes for extracts and liquid extracts that were very seriously in need of amendment, and he would not be wrong in saying that there was no class of preparations which were more sinned against than the extracts of the B.P. He hoped that Mr. Garsed would be induced to take up the subject further, with a view of finding a process that would extract a reasonable proportion of the alkaloid of the coca leaves in the form of cocaine.

Mr. Gamble said that from whatever standpoint the liquid extracts were looked at, they were not altogether satisfactory. In the case of fluid extract of coca it was undoubtedly a source of considerable difficulty, from the point of view of the dispensing pharmacist, because he felt that he was not safe in dispensing it on account of its variability in alkaloidal strength. Presumably the immiscibility of the B.P. extract was due to the presence of an inert wax, and he thought some process was necessary by which that wax could be removed. Perhaps use might be made of the process for making fluid extract of nux vomica. It certainly seemed necessary that the researches which had been made in regard to the fluid extract of the B.P. should be continued, and if the difficulties now experienced were removed considerable benefit would be conferred upon the pharmacist, and the work done in the Pharmaceutical Society's Research Laboratory would be considered in a better light.

Mr. Garsed said, in reply to Mr. Hills, that no experiments had been made to ascertain how much alkaloid had been extracted from the leaves by the B.P. process and how much was left in. It was quite possible that the great range of divergence in alkaloidal value was due to incomplete extraction, or it might be due to deficiency in the leaves themselves, as it was well known that the alkaloidal value varied from practically nothing to 1 per cent. In the case of the B.P. preparations, the difference was probably due to the original alkaloidal value of the leaves, and in the case of the miscible preparations it might be due to incomplete extraction or to subsequent decomposition. He was inclined to think it was due to incomplete extraction. With regard to Mr. MacEwan's remark as to the possibility of cocaine changing in the course of time into benzoyl ecgonine, that might take place on keeping if the alkaloid was present as an alkaloid and not as a salt. But all the samples were slightly acid, and, as far as he was aware, the salts of cocaine were much more stable than the alkaloid itself, and did not readily decompose into benzoyl ecgonine. Therefore he did not think that even keeping for a long time would cause the extracts to change in that manner. In regard to Mr. Naylor's question as to how the extracts were kept, they were kept in a dark cupboard at a temperature of from 50-60° F.

Mr. Naylor. Were they stored during the very cold weather?

Mr. Garsed: Yes, but there was a stove in the room.

A vote of thanks having been accorded to Mr. Garsed, Mr. F. A. **Upsher Smith** was called upon to read a paper by Professor Greenish and himself, on

The Preservation of Solution of Mercuric Chloride.

The paper is printed at page 215. After it had been read,

The **Vice-President** said the latter portion of the paper somewhat reconciled them to their position as pharmacists, for if they had to keep their solutions away from sunlight it would cause a lot of trouble. The subject of the paper was a very interesting one, and he was sure those present were indebted to Professor Greenish and Mr. Upsher Smith for the long series of experiments carried out. It was just the class of work that pharmacists could not very well take up for themselves, and he thought the conclusions arrived at were very satisfactory. It seemed, perhaps, a small matter in some respects, because he thought pharmacists usually made their solutions with distilled water; but there was one point to bear in mind, viz., that it was quite possible that solutions could be kept in the pharmacy under proper conditions. In the warehouse, however, they might not be kept under the same conditions, therefore the pharmacist would do well to see to the proper storage of solutions in bulk as well as in the stock bottles.

Professor **Greenish** said the question dealt with in the paper was not of their own choosing, but one which they had been asked to investigate by the Council of the Society. The question in this case seemed to be that, under certain conditions, solution of mercuric chloride would not keep well, and there was an impression that the actinic glass had an influence on the keeping properties. The outcome of their investigation was shown in the paper. From those results it would appear that in hospitals, where solutions were stored in stone jars and carboys, there was no reason why they should not keep very well.

Mr. **Harold Wilson** said that some two years ago, when he first went to University College Hospital, he made a few experiments with solution of mercuric chloride. He found at that time that the solutions were made with tap water, and he endeavoured to ascertain whether it made much difference. He found that the solutions made with distilled water did not change on exposure to light, while those made with tap water did, but not until a certain amount of time had elapsed. He found, also, that on keeping for a fortnight a rather copious yellow deposit formed on the bottom of the bottle, and he assumed that it was mercuric chloride. Further investigation showed that the jars from the wards were absolutely coated with a thick yellow deposit that it was most difficult to remove. The conclusion he came to was that if solution of mercuric chloride was made with tap water and used up quickly it was good, but if it was to be kept for any length of time the use of distilled water must be insisted on.

Mr. **Finnemore** asked whether Mr. Upsher Smith had determined the quantitative composition of the precipitate.

Professor **Greenish** said the black precipitate consisted of a combination of mercuric oxide and mercuric chloride.

Mr. **MacEwan** said the question of tap water was a very delicate one to speak of in London, because it was so variable in different districts. It was a good many years since Mr. Collier, of Guy's Hospital, made a series of experiments which demonstrated that South London tap water was the very best for making mercuric chloride solution. He (Mr. MacEwan) thought the authors ought to have given a definition of what was meant by tap water. He presumed that the New River water was meant.

Mr. **Upsher Smith** said he was glad to find that Mr. Wilson's results were similar to those given in the paper. In regard to Mr. Finnemore's question, there were two precipitates—a white one, which consisted of mercurous chloride, and another consisting of black crystals, which were only found in tap water on standing a long time—and these consisted of mercuric oxy-chloride. The tap water referred to was New River water.

A vote of thanks was accorded to the authors, and the **Vice-President** then called upon

Mr. W. H. Lenton to read a paper by Professor Greenish and himself on

Extract of Gentian.

As a result of their experiments the authors conclude:—(1) That the official method of treatment does not sufficiently exhaust the gentian root of its bitter principle. (2) That the boiling to which the root is subjected is disadvantageous in that a larger amount of pectin is dissolved than when cold extraction is used. (3) That extraction with cold water is preferable, two successive infusions being necessary. The method official in the German Pharmacopœia possesses certain advantages over that of the British Pharmacopœia, inasmuch as the drug is exhausted by cold infusion; by this process the bitter principle is more efficiently extracted, whilst less pectin is dissolved, and a better extract is obtained. At the same time, the relatively small advantage gained by the addition of alcohol to the concentrated infusions does not appear to justify the adoption of this part of the German Pharmacopœia process. (4) That although 45 per cent. alcohol thoroughly exhausts the bitter principle, the extract obtained on evaporation of the tincture has the disadvantage of being hygroscopic. (5) That the exhaustion of the root with cold water proceeds slowly. (6) That the infusions obtained from the whole root by the cold extraction process filter more readily than when the sliced root is used. (7) That gentian root is not, in their opinion, well adapted for percolation with water. The subjoined new monograph was submitted for consideration, with a view to its inclusion in the next edition of the British Pharmacopœia:—

Extractum Gentianæ.

Infuse gentian root in five times its weight of distilled water for forty-eight hours; pour off the infusion; press the marc; strain the expressed liquid; mix the liquids, and concentrate them to one-third their volume; filter when cold. Infuse the marc for twenty-four hours with a further quantity of distilled water equivalent to three times the weight of gentian root taken; repeat the process of decantation, expression, concentation, etc. Mix the two concentrated liquids and evaporate to the consistence of a firm extract.

The **Vice-President** said that the paper just read represented a long series of excellent experiments on a comparatively humble root, which had been worked to a definite conclusion. It was very gratifying to find that so much good work had been done by the first E. Northway Butt Scholar.

Mr. **Butt** said he should like to say that he was very well satisfied with the work Mr. Lenton had done. The object he had in view was to test the various preparations of the B.P. and to ascertain whether the processes there recommended are the best. The results of Mr. Lenton's investigation had been to show that the B.P. process for extract of gentian was not the best, and he had, after several months of hard work, devised a process which, he (Mr. Butt) thought, would produce a very much better form of extract than that at present official. He only hoped that Mr. Lenton would go on and overcome other difficulties in the same manner in which he had done in regard to extract of gentian. Of course, Mr. Lenton was the first scholar, and he (Mr. Butt) had thought that it would be better to begin on something simple, but he hoped that before Mr. Lenton ceased to be the Butt Scholar he would do more important work, although the experiments already carried out had required much patience, skill, and research.

Mr. **Naylor** said this paper was especially interesting to him because the members of the Formulary Committee of the British Pharmaceutical Conference had spent a considerable amount of time with a view to making compound infusion of gentian, and it was very gratifying to the Formulary Committee that the very useful series of experiments carried out by Mr. Lenton were in accord with those made by members of the Committee.

Mr. **MacEwan** asked if Mr. Lenton had ascertained whether the extract suggested by him was as efficient as a pill excipient as the old one. He asked that because extract of gentian was chiefly used as a pill excipient.

Mr. **Harold Wilson** asked whether Mr. Lenton had considered the presence of enzymes in the root, and their influence on the extract. He thought that future work in connection with the preparation of official drugs would have to be carried out to decide whether in preparing those preparations it is desirable to allow the ferment to act before the extraction of the drug is carried out, or whether the ferment should be destroyed before the extract is made. In regard to extract of gentian, if the root was boiled with water the ferment was destroyed, but the preparation would be different than would be the case if the drug was allowed to stand in cold water for some time. It seemed to him that there were a great many drugs in the B.P. in which ferments are present, and it would be necessary to find out what influence those ferments have upon the preparations. He thought it might possibly be shown that a more bitter extract would be obtained by preparing the preparations by maceration with cold water, as it was possible that some ferment had to do with the bitter principle. In regard to the method described by Mr. Lenton, it would be interesting to know if any experiments had been made with an extract obtained with absolute alcohol to see whether after hydrolysis the residue was not more bitter than before.

Mr. **Hills** said, in regard to Mr. MacEwan's remarks about extract of gentian being used chiefly as a pill excipient, that he hoped such was not the case, but that it would long be used as a medicinal agent.

Mr. **Finnemore** said his experience was that there was more gentian used than any other drug, and while the process suggested by Mr. Lenton for making extract of gentian was useful, he thought an important point was that gentian root could be thoroughly extracted with cold water.

Mr. **Holmes** supported Mr. MacEwan's contention that extract of gentian was a very important pill excipient.

Mr. **Brewis** asked whether Mr. Lenton's results were calculated upon absolutely dry root or if it contained sufficient moisture to make it flexible.

Mr. **Gamble** said probably the very best pill excipient was extract of gentian and glucose.

Mr. **Lenton** thanked Mr. Butt for the kind manner in which he had spoken of his work. In reply to Mr. MacEwan, he might say that he had not lost sight of the value of extract of gentian as a pill excipient, and Mr. Heslop had made several experiments with the extract suggested, and they were very satisfactory. In regard to Mr. Wilson's remarks about the enzymes, it was rather a difficult matter to decide straight away, but he would point out that the extract to which Mr. Wilson had referred was only slightly bitter, while the extract obtained by 45 per cent. alcohol subsequently was very bitter. Gentiopicrin, the bitter principle, by hydrolysis formed gentiogenin and a sugar, and so far as he knew gentiogenin was not a bitter substance at all. Mr. Brewis would find that his question was answered in the complete paper, which will be published later.

A vote of thanks having been accorded to the authors of the paper, the meeting terminated.

Library, Museum, School, and House Committee.

ATTENDANCE IN LIBRARY.

	Total.	Highest.	Lowest.	Average.
February (London)	431	25	6	18

CIRCULATION OF BOOKS.

February.	Total.	Town.	Country.	Carriage Paid.
London Library	225	145	80	£0 16s. 7½d.
Edinburgh Library........	291	176	115	£0 6s. 0d.

DONATIONS TO THE LIBRARY (LONDON).

Dr. M. Greshoff, Haarlem;—Indische Vergiftrapporten, 1902.

Royal College of Physicians of London:—List, 1902.

G. Street and Co., Limited, London:—Street's Newspaper Directory, 1902.

Pharmacy Board of Victoria:—Pharmaceutical Register for 1902.

DONATIONS TO THE LIBRARY (EDINBURGH).

Mr. J. Barclay, B.Sc., Birmingham:—Southall's Materia Medica, Sixth Edition, 1900.

Pharmaceutical Society of Ireland:—Calendar, 1902.

PURCHASE OF BOOKS.

The Committee authorised the purchase of the undermentioned books:—

For the Library in London.

Effront, Enzymes and Their Applications, translated by S. C. Prescott.
Richards, The Cost of Food.
Quain, Dictionary of Medicine, 3rd edition.
London University Calendar, 1902.

For the Library in Edinburgh.

Glazebrook, Light and Heat.

ATTENDANCE IN MUSEUM.

	Total.	Highest.	Lowest.	Average.
February	412	32	10	17

DONATIONS TO THE MUSEUM (LONDON).

The Director, Royal Botanical Museum, Berlin:—Specimen of Yohimb Bark.

Mr. A. H. Hoit, Southsea:—Specimen of Cherry Capsicums.

Mr. Th. Wardleworth, F.L.S., Liverpool:—Specimens of "Molle' Leaves (*Schinus molle*) and a false Sarsaparilla from the Argentine Republic.

TO THE HERBARIUM.

The Director, Royal Botanical Museum, Berlin:—Specimen of *Corynanthe yohimbi*, K. Schum.

Mr. R. J. Mellor, Hemel Hempstead:—Specimens of *Daphne laureola.*

The Smithsonian Institution, Washington:—Specimens of *Turnera aphrodisiaca* and *Casimiroa edulis.*

LETTERS TO THE EDITOR.

The Molybdate Test for Hypophosphites.

I am unable to agree with Mr. Millard that this test is distinctive or accurate in the case of hypophosphites. I have had considerable experience with it, and find that the blue colour develops in the presence of any reducing agent if the solution be acidified. Here, nitric acid is obviously the least desirable acid to use for acidification, as on heating it will tend to oxidise a hypophosphite, and also to oxidise sulphurous acid, or any other reducing agent. I have never found a blue colour to develop in the presence of hydrochloric or sulphuric acids alone, and it would be interesting to learn whether the colour will not develop when more than "a few drops" of sulphurous acid are added to Mr. Millard's solution in nitric acid. The presence of free nitric acid is not necessary, although it is desirable, in performing the ordinary test for a phosphate. The precipitate will form in presence of hydrochloric or sulphuric acids, but an excess of these diminishes, whilst an excess of nitric increases, its delicacy.

Frank R. Dudderidge.

Newcastle-on-Tyne, March 11, 1902.

In connection with the note by Mr. F. A. U. Smith (*P.J.*, February 22, p. 143), and the letter of Mr. E. J. Millard (*P.J.*, March 8, p. 201), respecting the above test, it occurred to me that the nitric acid solution of ammonium molybdate, ordinarily used in testing for phosphates, was at least an inappropriate, if not an unsafe, reagent to employ along with sulphurous acid, and that an aqueous solution of the reagent might be used instead. On making a few experiments it appeared that a 2 per cent. aqueous solution of ammonium molybdate (as employed in this laboratory for Longstaff's test for tin, *Chem. News*, **80** (1899), 282), answered the purpose admirably. A small quantity of this solution was mixed in a test tube with about its own volume of a nearly saturated solution of sulphurous acid, and one-half of the mixture was poured into a second test tube. On adding a few drops of a dilute solution of a hypophosphite to the contents of one of these tubes, a fine blue colour was developed either immediately or on standing for a short time. The liquid in the second tube was simply reserved for comparison when exceedingly dilute solutions of hypophosphite were under examination.

Leonard Dobbin.

Chemical Laboratory, University of Edinburgh,
March 11, 1902.

Mr. R. Lord Gifford and the Library Committee.

When writing the letter which appeared in last week's Journal, I had, of course, no idea of the discussion which would take place at the meeting of the Council, and be published simultaneously with my letter. I must say that I agree entirely with Mr. Gifford, and was more particularly surprised with the sarcastic remarks of Mr. W. Hills and his reference to the third paragraph. What would have been most interesting in connection with that matter would have been a report as to the identity of the privileged "elementary student." The most interesting item in the report so far as I am concerned is at the same time one of the most unenlightening, viz., the one referring to the conference between editor, advertising agent, and secretary. What was the nature of the business considered, and what was the result of their deliberations? I suppose (or rather, I hope) they have agreed on some line of policy which is to improve the Journal, and as it is the property of members of the Society, I think the President might have vouchsafed some explanation of that scheme, if scheme there be. No one, I imagine, wants anything published which would be detrimental to the best interests of the Society, and we must of necessity trust our Council without knowing every move they make; but at the same time, I hope Mr. Gifford will continue the line of action he has taken up, and insist on the rank and file being put in possession of more of the details of the working of the Society. There is one matter which comes, I suppose, before the General Purposes Committee, of which we hear absolutely nothing, but which, I think, might very well be published on the completion of the matter. I refer to proceedings against individuals—qualified or otherwise—infringing the Acts. Why should not report be made month by month that so many cases had been investigated, proceedings taken, and fines recovered? The information might also with advantage be given in tabular form, showing the various offences for which proceedings had been taken. This would show that the Council was alive to the necessity of protecting the legal privileges of qualified men, and I think would open the eyes of some men who at present think the Council is doing nothing in their interest. There are, I understand, lots of such cases which, owing to the fines being "paid on demand," never get into court, and consequently are not reported in the Journal. I write, of course, as an outsider, but it seems to me that there are many such subjects which are rightly discussed in Committee, but of which some particulars might be given at the monthly Council meetings. Our City Council supplies each of its members with a printed copy of all the minutes of the various committees which will come up for sanction at the next meeting of the Council. Surely some such minutes could be supplied to members of our Council, so as not to put the members to the trouble of having to examine the minute books of each committee for themselves. This is a matter affecting the country members much more than the London gentlemen, as they are only in town for a limited time each month. The Society, it seems to me, is passing through a serious crisis, and I sincerely hope that Mr. Gifford may be energetically supported in his demand that the members of the Society may be given such information as will enable them to take an intelligent part in the proceedings of the Society, and so remove an impression that is gaining ground that the Society is managed by a clique or cliques. A few years' experience as Divisional Secretary at the present time would open the eyes of some of our councillors.

Bradford, March 11, 1902. Alfred H. Waddington.

Sodium and Zinc Bromides in Mixture.

I have had the following prescription to dispense. It was written by an eminent specialist:—

℞ Sodii brom.	gr. xviii.
Zinci brom.	gr. ii.
Phenazone	gr. iv.
R. nux vom.	♏v.
Syr. aurant.	ʒi.
Aq ad	℥ss.

Mitte ℥viii.

Every care was taken in dispensing, the salts being dissolved separately in distilled water, and the solutions mixed. A few minutes after mixing a copious precipitate was formed. My customer complained of this to the doctor, who asserted that the prescription as written ought to make a satisfactory mixture, and recommended that it be taken to a well-known City firm. This was done, and, to my satisfaction, with a precisely similar result. Can you oblige by telling me what the reaction is, and whether it is possible to make a decent mixture of it?

March 8, 1902. "C. E. W." (70/16).

⁂ The addition of a few drops of diluted hydrobromic acid should clear the mixture, as the precipitate probably consists of zinc hydroxide and carbonate, the formation of which is due to the presence of free alkali in the sodium bromide used.—[Ed. *P.J.*]

The Preparation of Zinc Oleate.

In a recent issue of the *P.J.*, amongst practical notes contributed by Mr. W. Lyon, he refers to the unsatisfactory method given in the Pharmacopœia for preparing zinc oleate. I have not tried the modification he suggests, viz., squeezing the "precipitate," but am inclined to think that the process advocated by me (*Pharmaceutical Journal*, February 18, 1899, page 140) would be quite as satisfactory and expeditious. Possibly the note I refer to has escaped Mr. Lyon's notice.

Newcastle-on-Tyne, March 10, 1902. Geo. F. Merson.

Dispensing Queries.

In answer to "Radix's" query with reference to pills containing

Sulph.	gr. iii.
Ol. terebinth	♏iii.

in each pill, I cannot understand his object in liquefying the sulphur and adding the turpentine. I find the following method answers well, and produces a pill which will keep its shape, and will also disintegrate in warm water in less than half an hour. Rub the 144 grains of sulphur (use precipitated sulphur) down with

144 minims of ol. terebinth., add 40 grains p. saponis and about 6 grains p. tragacanth, and work into a mass. It will appear hopelessly soft, but it must be rolled out on the slab with a spatula, using very light pressure, cut the pills in the usual way, round roughly by hand, and finish with the pill rounder, again using very light pressure and a good sprinkling of starch powder. The pills will be large at first, but, on drying well, will be quite a presentable size; each pill, however, can be divided into two if necessary with dose "two three times a day." I send a pill made as above directions, not divided. The size is not at all abnormal.

March 10, 1902. "A. W. N." (70/14).

Apprenticeship, and After.

Thirty years ago I sat in a dingy solicitor's office in the city of Manchester listening, in fear and trembling, to the measured tones of the man of law as he read from a big sheet of blue foolscap a list of heinous vices, for which I had not the slightest inclination, but which that formidable document, with a sixty shilling Government stamp, seemed to imply that I was bound to fall into, and consequently incur most terrible pains and penalties. That sheet of foolscap bears in large, quaint characters, peculiarly black and repellent, the word "Indenture." That first Masonic initiation into the art and mystery of the business of a chemist and druggist is still clearly impressed on my memory. I had at the time only a vague notion of what the whole ceremony meant. I was the usual respectably reared lad of average stupidity, elementary knowledge, and a firm belief in the virtues of godliness, cleanliness, and honesty. The only clear-cut idea that penetrated my mind through the stuffiness of a typical lawyer's office was the thought that at some time, in spite of the dens of vice which my indentures first brought to my notice, I might be able to call myself a chemist and druggist. And it was a title worth attaching to one's name in those days. Until the past few months apprenticeship never had any mysterious charms for me, nor for anyone else as far as I could see, and yet the ghost which I thought had been laid for ever has begun to stalk again in all sorts of fantastic costumes in the pages of the weekly pharmaceutical press, official and unofficial. With all due respect for the authors of the recent tragic and comic literature on the subject of apprenticeship, I should like to see that ghost laid again. I read with great satisfaction Mr. Lyon's able paper on "Apprenticeship in Scotland," and, though he very learnedly discussed the matter, he did not, as far as I could see, get down to the bedrock. Many gentlemen of importance have described their trials, and praised and blamed their masters, but individual experiences leave us just where we were. "An Ordinary Pharmacist," in his usual lucid style, has given us an exposition on the question with vivid reflections on the masters. But we may take it for granted that, though both masters and apprentices, like everybody else in this wicked world, are far from perfect, masters certainly, as a whole, need not castigate themselves for their delinquencies, as they are not to blame for the shortage of apprentices. Every lad worth his salt who ever joined the ranks of pharmacy did so with the ultimate object of obtaining a title, which he thought was worth going through much tribulation to secure. Now it is proclaimed aloud to the whole world that the title is valueless, and this explains in a nutshell why youths of any talent or ambition refuse to be taken in, literally and figuratively, as apprentices to a calling which makes them work hard to secure a title which is protected by one Act of Parliament and stultified by another. But why this should be so is still a mystery to me, for in the Pharmacy Act of 1868 illegal practice and illegal use of the title are distinct offences. In 1880 we had the interpretation that limited companies are outside the Act, because a company cannot be examined, and therefore cannot practise, except vicariously—that is to say, qualified persons can be employed to practise on behalf of the company. It clearly follows that if an unqualified company cannot actually practise it cannot actually use the title. Vicarious practice is possible in most professions, but the vicarious use of a title is only tolerated in pharmacy. Those who uphold the present unjust state of affairs contend that the title follows the practice, and that a qualified man must be employed. As far as the title itself is concerned, both these contentions are ridiculous, because the title and the practice are quite distinct, so much so in the case of companies that they do openly and flagrantly call themselves chemists without employing a single qualified man. Provided they avoid poisons, or only deal in them *sub rosa* and even if they are trapped in the practice, they can still exploit the title without let or hindrance. We know how the administrative authority proceeds against a company which infringes the regulations regarding the sale of poisons. It takes action against the actual seller, whether an employee or the managing director himself, and if the managing director were unqualified, and actually sold a pennyworth of oxalic acid, he would be liable on detection to a fine of £5. We all admit that. Very well, then, how does that authority proceed in cases of infringement of the clause dealing with the protection of the titles? It doesn't proceed at all; *tant pis* for it. To sum up the situation, we find that the Pharmaceutical Society stands in the anomalous and absurd position of being able to fine a man £5 for selling a pennyworth of oxalic acid, whilst at the same time it suffers him openly and unrestrictedly to use a title which is as well protected as the practice in the Pharmacy Act of 1868.

"A Provincial Chemist and Druggist"

March 11, 1902. (125/17).

⁂ Apparently our correspondent overlooks the fact that while the decision as to companies being outside the Pharmacy Act did not affect its prohibition of the sale of scheduled poison by unqualified individuals, the question whether a company may use the protected title has not yet been decided or even raised. An authoritative decision of that question seems to be the desideratum at the present time.—[Ed., *P. J.*]

REPLIES TO CORRESPONDENTS.

Teething Powder (H. F. T.—70/11).—The combination appears to be a desirable one for the purpose.

Indiarubber (H. B.—70/10).—Consult the second volume of Thorpe's 'Dictionary of Applied Chemistry.'

Notice to Leave (A. C. E.—70/12).—Presumably the month expires thirty days after giving the notice to leave.

Gas-Lighter (T. F. W.—70/9).—Fine platinum wire and gauze are largely used for the purpose, and produce the effect you describe.

Water Analysis (W. S. T.—70/13).—Thresh's 'Simple Method of Water Analysis' (Churchill, 2s. 6d.) should serve your purpose.

Preservative for Fruits (G. H. H.—70/7).—Try a 4 per cent. solution of formaldehyde or a strong solution of common salt, containing a little alum.

Nursing as a Profession (W. P.—70/8).—Get a copy of Burdett's 'Nursing Profession: How and Where to Train,' published by the Scientific Press, Limited, at 2s. net.

Pharmacography (F. R. D.—124/34).—A difficulty exists in getting the matter, as the only persons thoroughly competent to prepare it are usually fully engaged in other directions.

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LONDON: SATURDAY, MARCH 15, 1902.

MEDICINE STAMP DUTY.

It is satisfactory to learn that the Western Chemists' Association, of London, has invited Mr. Leo. Atkinson to open a discussion at its next meeting on the vexed question of the incidence of Medicine Stamp Duty. The result of Mr. Atkinson's prolonged negotiations with the Board of Inland Revenue concerning the method of affixing the duty labels to medicines (see *ante*, p. 181) was decidedly encouraging, as showing that the responsible authorities are open to conviction if approached in a proper manner and presented with a clear case for consideration. Further, the skilful manner in which Mr. Atkinson conducted the negotiations, and the intimacy he has displayed with the provisions of the Acts of Parliament, in accordance with which duty is levied on medicines, single him out as a specially suitable person to suggest the lines on which further action ought to be taken in the interests of registered chemists. Without any desire to resist the payment of stamp duty on medicines when it is legally enforceable, Mr. Atkinson's position—as we understand it—is that the would-be law-abiding retailer of medicines should be spared the worry of being pounced upon unawares for penalties assumed to be incurred by alleged non-compliance with the Statute. That is to say, the registered chemist who has no intention of omitting to affix duty labels in cases where the law requires it ought to have in his power means of determining for himself when the law does or does not require a stamp to be used.

But such knowledge is not general among chemists, while even those who have been at considerable pains to comply as far as possible with the strict letter of the law are often in doubt as to the steps they ought to take in particular instances. Not necessarily because—regarding the matter from a professional point of view—they object on principle to affix duty labels to articles they offer for sale, but because they do not wish to saddle their customers with duty, the payment of which is not legally demanded. For, after all, it is the purchaser who pays the duty, and it would be absurd for retailers of medicine to resist, or trouble themselves about, the payment of a tax the burden of which must in the long run fall upon the consumer. Apart from that, however, the retailer is naturally anxious to offer his goods at the lowest price consistent with the return of a fair profit, and the saving of three-halfpence on a shilling article is a matter of some importance. Other things being equal then, the retailer would prefer to sell his medicines without affixing duty stamps, rather than otherwise. But at present he incurs a certain risk if he carries out that policy to the utmost extent, the more especially since the Board of Inland Revenue has shown a disposition of late to administer the Stamp Acts with a greater degree of stringency than formerly and—as pointed out in the Pharmaceutical Society's Calendar for 1902—many practices which the Board formerly regarded with indulgence are now visited with more or less summary punishment.

It becomes incumbent on registered chemists, therefore, to make themselves better acquainted with the grounds of liability to stamp duty, the more especially as the present policy of the Board of Inland Revenue is, apparently, to enforce the Stamp Acts strictly and impartially, without complicating its administrative work with many concessions. A number of doubtful points are explained in Alpe's 'Handy Book of Medicine Stamp Duty,' but it is possible to place too much dependence upon that work, which is not regarded as authoritative at Somerset House. Moreover, it is necessary to bear in mind that certain concessions which have been made by the authorities from time to time are not such as could be claimed as a matter of right, and they may not inconceivably be withdrawn if found dangerous to the Revenue. It is of importance, therefore, that there should be a satisfactory understanding as to what chemists may do as a matter of right. In one respect, as recently pointed out in the Journal (see *ante*, p. 162), uncertainty still exists on that point, *i.e.*, whether common household remedies and Pharmacopœia preparations come within the scope of the statutory exemption of medicinal preparations "having different properties, qualities, virtues, or efficacies," which are "known, admitted, and approved of in the prevention, cure, or relief of any disorder, malady, ailment, or complaint incident to or in any wise affecting the human body," and are sold by duly qualified persons for those purposes.

The following are the exact words of the Statute in reference to the general exemption here referred to:—

> All mixtures, compositions, or preparations whatsoever mixed or compounded with, or prepared from, medicinal drugs, medicated or chemical preparations or compositions, or other ingredients bearing different denominations, or having different properties, qualities, virtues, or efficacies, which shall be uttered or vended by any such surgeon, apothecary, chemist, or druggist as aforesaid (*i.e.*, "who hath served a regular apprenticeship") . . . . the different denominations, properties, qualities, virtues, and efficacies of which mixtures, compositions, and preparations as aforesaid are known, admitted, and approved of in the prevention, cure, or relief of any disorder, malady, ailment, or complaint incident to or in anywise affecting the human body, etc., etc, etc.

The uncertainty which prevails in regard to the liability of such preparations, whether recommended or not, ought to be dispelled, and it is to be hoped that the discussion by the Western Chemists' Association may result in a definite suggestion as to the manner in which the question may best be raised. Mr. Atkinson is understood to have definite views on the subject, and those, if submitted to the meeting next week, will doubtless be found worthy of such consideration as may lead to some decided action being taken in the matter.

ANNOTATIONS.

The President of the Pharmaceutical Society is not so old a person as might be imagined from the statement attributed to him by our Blackburn reporter last week (see p. 207). After referring to the fact that the critic is always with us, criticism being so much easier than acting, and that Mr. Gifford had made a reputation as a critic before he became a member of the Council of the Pharmaceutical Society, Mr. Newsholme remarked that he himself was a critic fourteen years ago, but the reporter unkindly reported it as "forty" years ago. Doubtless Mr. Newsholme was possessed of the critical faculty as much as forty years ago, but it was not exercised on such serious matters as he had in his mind when he spoke at Blackburn.

The Annual Dinner of the Pharmaceutical Society will be held on Tuesday, May 27, in the Whitehall Rooms, Hôtel Métropole, London, with the President in the chair. At a preliminary meeting held in the Society's House, on Wednesday last, it was decided that the cost of the tickets should be one guinea each as usual, and a committee was appointed to make the necessary detail arrangements. The Committee consists of the President, Vice-President, and Treasurer of the Society, together with Messrs. Attfield, Bourdas, Carteighe, Cracknell, Hills, Hopkin, Paul, Robinson, Taylor, Umney, and Warren. It was announced that the number of stewards already amounted to ninety, as against sixty-seven at the corresponding period last year. Other members of the Society who desire to have their names included in the list of stewards should communicate as soon as possible with the Hon. Secretary of the Dinner Committee, 17, Bloomsbury Square, London, W.C.

The Influence of Phosphorus in Pills on alkaloids and other organic substances, has been investigated by Dr. W. H. Martindale, who, for the purposes of examination, prepared phosphorus pills with the addition of strychnine (base), morphine (base), quinine sulphate, nitroglycerin, and zinc valerianate respectively, while to render the examination more exhaustive the formulæ were prepared in duplicate, employing in the first instance the official phosphorus pill, and in the second either the theobroma oil or a prepared suet basis, the last-mentioned being used where the additional ingredient in the pill rendered it preferable to produce as small a pill as possible. Large doses were arranged, as those would be more advantageous to any possible decomposition, and if such should occur it would be more readily capable of detection. Details of the experiments are published in last week's *British Medical Journal*, and it is sufficient to state here that the investigator satisfied himself as to the absence of any considerable interaction or decomposition in the case of alkaloids. His experience had previously shown him that, in the case of the phosphoretted suet mass, pills composed of reduced iron in various combinations with strychnine, quinine, etc.—of which the formulæ are numerous, and in which one might be led to expect decomposition—will show a luminous surface on cutting even twelve months after they have been prepared. That in itself is thought to afford good proof of the protective action which the fatty basis exerts. In the case of the present experiments, even after two months, most of the pills were found to be luminous in the dark on cutting them in half, thus indicating that no great amount of oxidation of the phosphorus had set in. Of the combinations of nitroglycerin by far the best in that respect were those prepared with simple theobroma oil solution. It is concluded that there is in most instances no interaction or decomposition of organic substances prescribed in pill form with phosphorus, and though in the case of zinc valerianate evidence was afforded of such combination, there was reason to think that it had taken place in the process of extraction.

The Drug Habit is alleged by a writer in the *Pall Mall Gazette* to be gaining ground in all classes of society, but, as usual when such broad statements are published, no evidence is adduced in support of the writer's contention. He signs himself "A Chemist," and asserts that each class has its favourite brand of poison, the professional man choosing morphine, the soldier strychnine or atropine, and the actor cocaine, while women prefer chloral and bromides. More to the point is the statement that it is difficult to regulate the sale of narcotic poisons, and impossible to prohibit it, since a particular drug may be required for purposes which are quite legitimate. The writer of the note in question then proceeds to point out that before supplying a scheduled poison such as atropine, a chemist must obtain the signature and address of the purchaser. He wisely abstains from specifying the many poisons which are unscheduled and can be obtained without any formality, but he explains that "patent" medicines containing morphine and strychnine can be bought from any drug store. Continuing, he adds that: "A doctor's prescription, whatever its constituents, is as a rule prepared and handed over without question; but let us say that this medicine contains twelve maximum doses of morphine, the patient is directed to take but one dose daily, he returns home, and swallows at once the whole contents of the bottle. Maybe, the chemist is censured by the jury at the inquest. It would be as reasonable to blame a publican for supplying a gallon of whisky to a man who died soon after of alcoholic poisoning."

The Morphine Habit is discussed in the same newspaper by one of the jury in the remarkable case of Forsythe *v.* Law, wherein a patient sued her medical attendant for alleged negligence in wrongly administering to her large quantities of morphine, chloral, cocaine, and other drugs, as the result of using which she alleged she had become temporarily insane. The jury found for the medical man, and intimated that the case ought not to have been brought into Court. But this particular juror points out that a far more serious aspect of the case is the facility with which morphine and other powerful drugs are obtainable from chemists in large quantities by ignorant persons, by the simple device of sending an old prescription and asking for a repetition of the supply originally ordered by a doctor. He states that it was, perhaps, scarcely necessary for the special jury to recommend, in view of the disastrous effects of the uncontrolled supply of morphine to patients by chemists, that some legislation is needed, when there is a special faculty of medicine whose recommendation would carry far more weight than the jury's casual opinion. He is of opinion, however, that the matter is one of national and public interest, and that it will be most unfortunate if the interest aroused by the professional aspect of the case of Forsythe *v.* Law should detract from the attention that ought to be paid to the more serious view of the circumstances which affect the public good—namely, in respect of the real and essential cause of the nurse's unfortunate fate in acquiring the morphine habit, owing to the absence of proper control over the sale of the drug.

An Examination for Coroners would not be an unreasonable thing and should, among other requirements, test the candidate's acquaintance with the poison laws in force. Or, if that be not feasible, coroners should at least be furnished with carefully prepared summaries of such laws and expected to make themselves familiar with the same. We should then be spared such displays of ignorance as are only too common in reports of inquests. The latest exhibition of the kind occurred at Wycombe, on March 3, when the Bucks Coroner, at the conclusion of an inquest, complained of the way in which carbolic acid is sold in some places within his district. He said he had had several cases of poisoning by carbolic acid during the last few months, and it seemed to be the idea in some small towns that carbolic acid was not one of the poisons it was necessary to sign for. It had been made a poison by special Order in Council, and he should like it to be generally known that carbolic acid could not be purchased at the chemist's without signing for it in the proper way (*sic*). Unfortunately, as it happens, carbolic acid is not one of the poisons it is necessary to sign for, and the Bucks Coroner is quite wrong with regard to the extent to which its sale is legally restricted.

The Discussion on Unqualified Dispensers is not in quite so acute a stage as it has been in medical circles, but an anonymous correspondent of the *British Medical Journal* last week referred to the recent letter from Mr. Morrison, solicitor to the Pharmaceutical Society, from which, he thinks, it might be inferred that the Pharmaceutical Society prosecutes chemists as well as medical men for keeping unqualified assistants for the sale of poisons. But the answer of the Home Secretary to Mr. Caldwell in the House of Commons on February 3 shows that there is no provision under the Pharmacy Acts for the prosecution of the employers of unqualified assistants, though under those Acts medical men and chemists are on the same footing as regards the sale of poisons. But the General Medical Council has stepped in and declared that what the chemist or doctor whose surgery is attached to his house may do with impunity, the doctor whose surgery is detached from his house must not do under the penalty of losing his means of livelihood. The "inequality and absurdity" of this decision do not, according to the anonymous writer, seem to have struck the medical profession generally. Nor, we might add, do more obvious inequalities and absurdities.

The Sale of Vaccine by Chemists is another topic discussed in the *British Medical Journal*, the editor of which paper has found it necessary to inform an inquirer that there is no law to hinder a chemist or druggist, or anyone else who chooses, from retailing vaccine lymph. Where the retailer obtains the lymph, how long he keeps it, and what precautions he takes in storing it are matters over which there is no statutory supervision, and the question is simply one of good faith and care and knowledge on the part of the retailer. Exactly so, and the public is probably better served in this matter when chemists are the retailers than may otherwise be the case. The *B.M.J.* has no special information as to what extent the custom of selling lymph by chemists prevails, but the editor informs his questioner that in one large city he knows much lymph is sold to medical men by a druggist who acts as agent for a firm of lymph producers, and there is no reason to doubt the trustworthiness of the druggist. He adds, however, that it is to be supposed the sale of lymph to other than medical men will be very exceptional. In conclusion, it is strongly urged that the whole business of vaccine lymph production and distribution should be under Government supervision.

Acetylene Generators have now been reported on by the Committee appointed to investigate those appliances. It is pointed out in the report that a large proportion of the generators examined belong to the automatic class. In these the object is the gradual generation of the gas as used, whereas in the non-automatic types the whole of the gas which can be generated from a given charge of carbide is evolved in a short time, and a gas holder has to be provided large enough to contain it. The contention is that the generation of the gas as used, and the absence of a large gas-holder are advantageous or convenient. When all goes well that may be so, inasmuch as under the skilled supervision and favourable conditions of the tests made serious difficulties did not arise, and in general the apparatus worked well. The Committee is not satisfied, however, that under the varied conditions of use, especially with unskilled labour, that would always be the case, and it is not thought that the advantages aimed at by the designers of automatic apparatus are sufficient to make it worth while to incur the possible trouble which we fear may be met with in the practical use of automatic generators, especially those of complicated design. In certain circumstances, with due safeguards, the employment of automatic generators may be admittedly convenient. The Committee thinks it right to point out that, while the generators have in no instance shown evidence of being otherwise than safe under the conditions of the test to which they have been subjected many are of unnecessarily and undesirably complicated design, and some are not sufficiently strong in construction. On the whole, having regard to the conditions of use which must often prevail, it is considered that in the selection of an acetylene generator regard should be had to the following desiderata: (1) Simplicity of action and design; (2) strength of construction; (3) high efficiency, as indicated by the yield of gas per pound of carbide; (4) low pressure in generator; and (5) facility of removal of the residue.

The Newcastle-under-Lyme Insecticide Case, a report of which appeared in last week's Journal (see p. 205), is to be followed by an appeal, Mr. T. B. Sproston having intimated to the Newcastle magistrates, on March 12, that written notices had been served upon certain justices demanding a special case in respect to the conviction of Moses and Ernest Jenkinson, florists and seedsmen, of Newcastle, for an offence under Section 17 of the Pharmacy Act, 1868, in regard to the sale of "insecticide," a compound, containing nicotine, for destroying insects on plants. The case would be submitted for the opinion of the High Court, and he asked the justices to fix a security upon Messrs. Jenkinson to prosecute in the appeal. The justices, Messrs. C. H. Hardeman and R. C. Trigger, fixed the bonds at £50 each on Moses and Ernest Jenkinson, who entered into the recognisances in due form, so that Mr. T. G. Dobbs will now have a further opportunity of raising the point he contested last week.

The Poisons Committee of the Privy Council resumed its sittings on Monday last, and heard the evidence of a number of witnesses representing agricultural, horticultural, and technical interests. The sitting lasted three days, and it is understood that no further evidence will be taken. On the 10th instant Mr. Richard Bremridge, Registrar of the Pharmaceutical Society, attended, and was examined on points of procedure in connection with the administration of the Pharmacy Act, 1868. Mr. J. Rutherford Hill, the Society's Assistant Secretary in Edinburgh, was also present on that day, and submitted evidence correcting certain inaccurate and misleading statements made by a previous witness. Mr. Walter Hills, the recently-appointed pharmaceutical-member of the Committee, was present throughout the session of the Committee. This opportunity may be taken to state that the paragraphs recently circulated in the public press forecasting the nature of the committee's report are merely so many hopeful expressions of what a certain section of the trading community desire to see realised. Whether that pushful optimism is well grounded or not cannot be known by any person yet.

POISONING CASES AND INQUESTS.

Chlorodyne. On Wednesday, March 5, the Manchester City Coroner held an inquest concerning the death of Alice Wackerbarth (41), wife of a bicycle maker, which occurred the previous day. The evidence was to the effect that eight or nine months ago deceased began to take chlorodyne for a cold, and afterwards got to like it. On Tuesday, March 4, she had apparently taken an overdose. The jury found that death was due to an overdose of chlorodyne.

Chloroform.—On Saturday, March 8, an inquest was held at Bath concerning the death of Catherine Louisa Thomas (35), a nurse at the Royal United Hospital. The witnesses stated that on the previous Monday deceased returned from visiting her relatives at St. Helen's. The following Thursday, having to go on night duty, she went to bed about 5.30 p.m., asking to be called about 7.30. As she did not answer the call, another nurse entered the bedroom and found deceased lying with her face on the pillow in such a position that the mouth and nose were covered. There was a small chloroform bottle in the bed, and as deceased had been in the habit of using chloroform for sleeplessness and neuralgia, it was supposed she had placed some chloroform on the pillow and endeavoured to inhale it. Death was due to asphyxia. The jury found that deceased died by misadventure caused through an overdose of chloroform.

Strychnine.—An inquest was held at Halifax on Tuesday, March 4, on the body of Thomas Topham (40), chemist and druggist, 2, Clement Street, Pellon Lane, Halifax. The evidence showed that deceased had been in the habit of taking drugs for sleeplessness since October last, and on January 16 he was found to be suffering from chloral hydrate and morphine poisoning. Medical assistance was procured, and his condition gradually improved, but on Sunday, March 3, he was still very weak and, in the opinion of his wife, unable to get from the bedroom to the shop and back again. However, early on Sunday morning she awoke to find him in convulsions, and a little later he died. A post-mortem examination pointed to strychnine poisoning. The jury found that death was due to strychnine poisoning, but there was not sufficient evidence to show how it was administered or when.

Morphine.—At the Westminster Coroner's Court on Tuesday, February 25, evidence was given concerning the death of James Hills-Johnes (33), a lieutenant in Kitchener's Horse, invalided home from South Africa. It was stated that he had suffered from neuralgia and had taken morphine to produce sleep. The medical evidence was to the effect that death was due to syncope from the action of alcohol and an overdose of morphine. "Misadventure" was the verdict of the jury. A similar verdict was returned in the case of David Thomas Davies (37), a medical assistant, who was temporarily staying with a friend at the Hampden Residential Club, Phœnix Street, Somers Town, and on Tuesday morning, February 25, was found dead in bed. The evidence showed that he had suffered from insomnia and had been in the habit of taking morphine.—Dr. Mudd of Oakley Square, said death was due to an overdose of morphine, deceased having evidently taken his dose by guess work.—The Coroner: A rash thing to do. Morphine requires to be carefully weighed. A quarter of a teaspoonful in excess would prove fatal.

Opium.—An inquest was held at Handsworth, on Saturday, March 8, respecting the death of Thomas Dunn (61), bricklayer's labourer. It was stated that deceased had suffered from bronchitis, and had been in the habit of taking drugs to get relief. On Tuesday, March 4, he went to bed the worse for drink, and the next day he was found to be suffering from opium poisoning. A bottle which had contained one pennyworth each of paregoric, glycerin, nitre, and syrup of squills was found empty in the bedroom. The jury found "That the deceased died from coma, the result of opium poisoning, through misadventure."

Obituary.

Abel.—On February 21, Frank George Abel, Chemist and Druggist, Tonbridge. Aged 37.

Clapham.—On February 25, John Clapham, Chemist and Druggist, Leeds. Aged 74.

Eagle-Trescot.—On February 21, James Robert Eagle-Trescot, Chemist and Druggist, Gosport. Aged 56.

Gibson.—On March 1, Elizabeth Judith Frances, wife of John Pattison Gibson, Chemist and Druggist, Hexham. Aged 65. Mrs. Gibson, who was the mother of Mr. John Gibson, F.C.S., Divisional Secretary of the Pharmaceutical Society for the Hexham Division of Northumberland, was a grand-daughter of the late Mr. John Adamson, solicitor, of Newcastle, and had taken an active interest in Church work in Hexham.

Marsh.—On March 10, John Hoskins Marsh, Chemist and Druggist, Bath. Aged 67. Mr. Marsh had been a member of the Pharmaceutical Society since 1869.

Simpson.—On February 26, Professor Maxwell Simpson. Aged 86. According to the *Times*, Maxwell Simpson was born in Newry, County Armagh, and educated at a private school in Newry and at Trinity College, Dublin. He was at first disposed to adopt medicine as his profession, but, subsequently visiting Paris, he came within the magical influence of the great chemist Dumas, and henceforth he devoted his life to chemistry, without regard to material considerations of any sort. Associated with such men as Kolbe, in Marburg, Bunsen, in Heidelberg, and Würtz, in Paris, he carried out important researches in organic chemistry, and, after fifty-seven years' devotion to science, without appreciable material reward, he was appointed in 1872 Professor of Chemistry in Queen's College, Cork. This position he held with distinction for twenty years, when he retired with a Civil Service pension. Professor Simpson was a Fellow of the Royal Society, of the King's and Queen's College of Physicians of Ireland, and of the Royal University of Ireland; an Honorary M.D. and LL.D. of Dublin University, and D.Sc. of the Royal University; a Senator of the Queen's University, and President of the Chemical Section of the British Association at its Dublin meeting in 1878.

Topham.—On March 2, Thomas Topham, Chemist and Druggist, Halifax. Aged 40.

NOTES IN PARLIAMENT.

Analyses for Agricultural Purposes.—According to a reply made to Mr. Murnaghan by Mr. Wyndham in the House of Commons, the Department of Agriculture in Ireland has already established a seed-testing station at which farmers can have their seeds tested for purity, germination and germinating energy, at small fees. Provision is made in the Fertilisers and Feeding Stuffs Act, 1893, for the district analysts of local authorities to make analyses of soil fertilisers and of feeding stuffs. The Department has suggested to the local authorities that they should arrange for the systematic taking of samples for analysis by their analysts, and has promised to contribute a portion of the costs that may be so incurred. The Department will await the result of their recommendation to the local authorities before deciding what further action, if any, should be taken. The question of the analysis of soils is under consideration.

Smuggling Saccharin.—It is alleged that bags of flour have been utilised extensively at Havre for the purpose of smuggling saccharin and other dutiable goods into the United Kingdom. Questioned on the subject, however, in the House of Commons, Mr. A. Chamberlain stated that the Board of Customs have no knowledge of such extensive misdoings, but they are fully alive to the possibility of attempts of the kind being made, and their officers are taking all precautions in their power to prevent them.

Food Preservatives and Colouring Matters.—Sir Seymour King has questioned the President of the Local Government Board as to whether he intends to take steps by the introduction of a Bill or otherwise for giving effect at an early date to the recommendations of the report of the Departmental Committee which inquired into the use of preservatives and colouring matters in the preservation and colouring of food; and whether he is aware of the opinion among the sanitary authorities in England in favour of those recommendations. Mr. Long replied that the report referred to is still under consideration, and he cannot at present make any statement in regard to the course to be taken in regard to it. With respect to the last part of the question, the Local Government Board had received only one or two communications from sanitary authorities on the subject.

The Use of Copper Salts, for the colouring of preserved goods has been the subject of a question by Mr. J. H. Whitley, who wished to know whether the attention of the Local Government Board had been drawn to a recent prosecution in Halifax of certain traders on the charge of selling goods so coloured. Mr. Long was invited to say whether he proposed to take any action in accordance with the recommendation of the Departmental Committee of July 10, 1899, in the direction of issuing for the information of traders a schedule of such colouring matters as may be considered inimical to the public health. Mr. Grant Lawson, who replied, said he had read a newspaper report of the case referred to, but whilst the report of the Committee was still under consideration he could not make any statement.

CHEMICAL SOCIETY.

At a meeting of this Society, held at Burlington House, Piccadilly, on Thursday, March 5, Dr. Divers took the chair, and there was a good attendance of members and visitors.

Dr. Bone read the first paper on

The Slow Oxidation of Methane at Low Temperatures.

The author began by referring to the controversy which had been going on for some time with regard to the combustion of hydrocarbons in an insufficient supply of oxygen, when according to some statements the hydrogen was oxidised preferentially to the carbon. In order to clear up the uncertainties which had hitherto existed, the authors had been working on the gradual oxidation of the hydrocarbons so that the progress of the reaction might be watched, when it would be noticed whether any selective combustion of either hydrogen or carbon occurred. Methane was chosen as being the simplest member of the series, and therefore offering the least difficulties in the way of the formation of complex decomposition products. It was found that this gas was stable at 500° C., even after being kept at this temperature for one week. In these experiments mixtures of methane and oxygen were exposed in sealed glass tubes to temperatures from 300° and upwards. It was found that 300° was the lowest temperature at which any appreciable combination occurs, and then it took place only very slowly; as the temperature rose the rate of combination increased. The surface factor also exerted a certain influence on the rate of combination of the gases. The kind of glass of which the tubes were composed was of considerable importance, and the author found that tubes of boro-silicate glass gave the most satisfactory results.

The possible ways in which the reaction might proceed were then referred to. These were as follows:—

(1). Selective combustion of hyrogen—

$$CH_4 + O_2 = C + 2H_2O.$$
$$2CH_4 + O_2 = 2C + 2H_2O + 2H_2.$$

(2). Selective combustion of carbon—

$$2CH_4 + O_2 = 2CO + 4H_2.$$
$$CH_4 + O_2 = CO_2 + 2H_2.$$

(3). Simultaneous oxidation of carbon and hydrogen—

$$CH_4 + O_2 = CO + H_2O + H_2.$$
$$2CH_4 + 3O_2 = 2CO + 4H_2O.$$
$$CH_4 + 2O_2 = CO_2 + 2H_2O.$$

The possible secondary reactions were next discussed.

(*a*). Those reactions in which C is involved, *e.g.*—

$$C + H_2O = CO + H_2.$$
$$\text{or } 2C + O_2 = 2CO.$$

(*b*). $CO + H_2O \rightleftarrows CO_2 + H_2.$

(*c*). $2CO + O_2 = 2CO_2.$

Moist.

(*d*). $2H_2 + O_2 = 2H_2O.$

(*e*). Methane and CO_2.

Methane and Steam.

It was shown that the most important of these was (*d*), in which hydrogen and oxygen interacted. This was considered the crux of the whole of these reactions. Several bulbs containing a mixture of hydrogen and oxygen were heated to 350° C. for a week. In only one case was any water formed, and this was in a bulb which had become devitrified in the course of the experiment. No interaction occurred between methane and carbon dioxide, or methane and steam. It was considered proved, therefore, that the "secondary" reactions did not interfere. Returning to the experimental work, the author said that in no case had carbon or hydrogen in the free state been found. Water was one of the primary oxidation products, and in addition carbon dioxide, carbon monoxide, and residual methane were always found when the contents of the bulbs were examined. In conclusion, it was stated that the oxidation of carbon and hydrogen proceeded simultaneously.

Dr. Francis next read a paper on "Isomeric-additive Compounds of Dibenzyl Ketone and Deoxybenzoin with Benzal-*p*-toluidine, etc.," after which

Mr. Fenton communicated a paper on

Mesoxalic Semi-Aldehyde.

He referred to some previous work on the influence of iron in bringing about oxidation by means of hydrogen peroxide, and then said that he had since been experimenting on the influence of iron when the halogens were used as the oxidising agents. He then proceeded to describe the results of his experiments on the oxidation of tartaric acid by means of chlorine in the presence of iron. Oxidation took place readily. The products were then examined. After distillation *in vacuo* the residual tartaric acid was crystallised out, when a syrupy product remained. This proved to be the semi-aldehyde of mesoxalic acid. The author said that at first a ferrous salt appeared necessary, and subsequently a ferric salt in order to bring about oxidation in this case.

Papers by Dr. Forster and Dr. Chattaway followed, but were of little pharmaceutical interest. The meeting was then adjourned till March 19.

CHEMISTS' ASSISTANTS' ASSOCIATION.

A meeting of this Association was held at 73, Newman Street, London, W., on Thursday, March 6, the **President**, Mr. J. Wicliffe Peck, in the chair. The subject of the programme for the evening was a lecture by Professor J. Norman Collie on

Phosphorescence.

Professor **Collie**, in introducing the subject, said that the term phosphorescence was usually associated with light in the dark, but, he explained, any solid, if heated, will emit light when the temperature is raised sufficiently. Many substances, however, emit light without any perceptible evolution of heat, and this is called "phosphorescence." As instances he mentioned phosphorus in air, certain flowers, decaying wood, putrid fish, glow-worms, and fire-flies. Phosphorescence, said Professor Collie, can be roughly said to be associated with:—(1) Chemical change—or when light energy is obtained from chemical action; (2) molecular movement but no chemical change—or when light energy is obtained from external sources. The latter kind of phosphorescence is by far the most brilliant, and is usually produced in Crookes' tubes, by means of Röntgen rays, etc. Phosphorescence of gases can be seen in vacuum tubes and of solids in Crookes' tubes. Gases as a rule emit light which, when examined by the spectrum, is very simple. Some, however, such as nitrogen, are more complicated. Solids yield almost always a continuous spectrum when the light is analysed by spectroscope. In regard to the duration of phosphorescence, Professor Collie stated that some substances continue to emit light after having been excited by some external source of energy, and he instanced nitrogen gas, Iceland spar, and Balmain's luminous paint. The explanation of phosphorescence, to take the simplest case of a gas, is that the particles are highly charged at the negative electrode, having intense extra vibration or oscillation of the molecules, and these, when they come in contact with one another, have the vibrations damped down to a simpler form of energy or light. Therefore duration of phosphorescence is probably due to, and may be taken as a measure of, the rapidity of discharge. This can be increased by heat, as in the case of fluor-spar, or retarded by cooling; and Professor Dewar had shown how that a feather plunged into liquid air, and then withdrawn, would emit light. The case of solids, said the lecturer, is, of course, more complex, as the free movement of the molecules is infinitesimal compared with a gas; also the molecules of a solid are more complex than those of a gas. This could be shown to be probably so by the phosphorescence of lime, which, according to its method of preparation, could be made to phosphoresce either red, orange, yellow, green, blue, or violet. That this was so Professor Collie showed by experiment, with specimens prepared and mounted in tubes by Mr. Jackson, of King's College, the different colours produced with various samples of lime being of the most exquisite beauty. And, he pointed out, this difference in the colour seemed to prove that lime is of a more complex molecular structure than is usually stated in text-books. The lime which produces a blue phosphorescence—the vibrations being most rapid—is the nearest approach to the CaO of the text-books, while that which produces a red phosphorescence—the vibrations being much slower, indicating larger molecules—would appear to differ most from CaO. Professor Collie pointed out that the subject of phosphorescence is not only of scientific interest, but is also rapidly becoming of commercial importance.

A hearty vote of thanks was accorded to Professor Collie for his interesting lecture, and in reply he expressed the pleasure it had given him to exhibit the tubes and specimens which had been prepared by Mr. Northall Laurie and himself during last autumn. The colours produced in the tubes were really very beautiful, the delicacy and clearness of tint being such as is not to be found even in flowers.

NEWCASTLE YOUNG CHEMISTS' ASSOCIATION.

At a meeting of this Association, held at Newcastle-on-Tyne on March 5, the **President**, Mr. Barry Noble, in the chair, Mr. **Dudderidge** read a paper, entitled

The Pharmacist as a Professional Man.

He said there was no reason why the professional aspect of pharmacy should not be cultivated to a greater extent than was generally done, without encouraging any of the false pride which looked down upon the trading side of it. "Provide things honest in the sight of all men" was an injunction of Holy Writ, and if the pharmacist was so situated, as he feared the majority of those in the thickly-populated districts were, that he was unable to make an honest living out of that which the law commanded he should be qualified for, it was no disgrace to him if he supplemented his income by honest trading in other goods. There were, however, profitable side lines in the development of which he would find scope for exercising the knowledge which he has acquired in the course of his education as a pharmacist. One frequently heard the complaint that pharmacy does not receive due recognition, and, whilst he admitted the truth of the complaint, he was compelled to acknowledge that the lack of recognition was largely owing to the way in which the business was carried on by many of its craftsmen. "Pharmacy for the pharmacist" was still a desideratum to the majority of their body, but its achievement would depend greatly upon the confidence of the public. It was the purpose of his paper to try to show how that confidence could be secured. He thought that more prominence might be given to the dispensing department. Dispensing businesses were comparatively rare, but his experience, supported by that of others, convinced him that such a business could be cultivated to a certain extent. The way in which dispensing was turned out would do much either to secure or to lose the public confidence. Attention to details such as corks, paper, etc., made all the difference between a well and a badly-finished mixture. The late Peter Squire is reported to "have jumped down the throat" of a new assistant with regard to the way he had corked a bottle. "One-third in and two-thirds out," he said, as he pulled out the offending cork and replaced it by another; "that is the way to cork a bottle." The labelling of a bottle more than anything else revealed the nature, tidy or otherwise, of the dispenser. Everyone was not naturally a good writer, but good writing could be cultivated. He wished young pharmacists would bear this in mind. Neatness in wrapping also made a great difference to the appearance of the finished article. Yet how frequently was this point overlooked? General habits of cleanliness and tidiness were necessary in any business, but were of vital importance to the pharmacist. He was obliged to confess that his experience as a teacher led to the opinion that "general untidiness was as much responsible for failure in the examination room as lack of knowledge." They had always to use suitable apparatus; they had not to use a pill pestle for an emulsion, etc.; also they should see that the utensils were clean to commence with, and leave them in the same condition. He advised them that if ever they became proprietors of businesses themselves not to sacrifice quality to price. It was not only immoral, but it was foolish. If the public are not trained to pay for skill and quality, it is the fault of their trainers. They should make every preparation they could themselves. Factory-made preparations were not, in his experience, either usually cheaper or better than home-made ones. If chemists made more of their own preparations local associations would get more practical papers than they do. The neat and accurate pharmacist, who encourages the pharmaceutical side of the business, would be brought into closer touch with the medical profession than the mere huckster of drugs, qualified though he be, whose ambition is to buy the cheapest stuff and sell most of regardless of the quality. Drug stores, he had noticed, were remarkable for their poor show of drugs. Familiarity would not, in this case, breed contempt, but would lead to a profitable application of the pharmacist's skill in such side lines as urine and other analyses. One frequently heard the Major Examination decried, and from two opposite standpoints; first, because it was said to be of no use in an ordinary business; the other, because it is not so scientific as the B.Sc. Examination. While he admitted that the value of it was not always evident in everyday business, there were cases when a "Major" man could make a little more out of his more extended knowledge than a "Minor" man. Then again, although the Major is not a B.Sc. degree, it requires a knowledge in subjects such as materia medica, which was far more useful to the ordinary pharmacist than the B.Sc. subjects are. Its requirements in physics would do well to prepare the way for a diploma in optics, a side line both professional and profitable to the pharmacist. He said chemists should aim rather in this direction than in vieing with oil merchants and hairdressers. Then they should hear less about bad times and unfair competition, and should secure that larger share of recognition in the professional world which was their due.

A lively discussion followed, in which the President (Mr. Barry Noble) and Messrs. Hird, Hollingsworth, Blechynden, Weston, and Usher took part, after which a hearty vote of thanks was accorded to Mr. Dudderidge for his interesting paper.

MIDLAND PHARMACEUTICAL ASSOCIATION.

At a meeting of this Association, held at the University, Birmingham, on March 6, the President (Mr. John Barclay, B.Sc., F.C.S.) in the chair, a paper was communicated by Messrs. J. Barclay and E. W. Mann on

The Standardisation of the Official Compound Tincture of Benzoin,

in which they suggested that the percentage of extractive in the tincture should not be allowed to fall below 18 per cent., since about 20 per cent. of soluble matter was used in its preparation. The examination of seven commercial samples of this tincture yielded the following results:—

No.	1.	2.	3.	4.	5.	6.	7.
Sp. Gr.	0·8885	0·397	0·8995	0·897	0·896	0·9045	0·905
Solid	11·99	17·62	17·22	15·85	17·47	18·03	19·25

In the opinion of the authors Nos. 1 and 4 were weak and No. 7 was abnormally strong. The authors also suggested a new standard for the tincture, based on the proportions of free and combined benzoic and cinnamic acids in the drugs used for preparing the tincture, and subsequently present in the tincture itself. No attempt was made to distinguish between benzoic and cinnamic acids, their combining weights (121 and 147 respectively) being thought sufficiently near to one another to render the methods adopted approximately reliable. The process used consisted essentially of extracting the free acid with chloroform, and determining it by titration, the combined acid being subsequently dealt with in a similar manner after saponification with alkali. From 1 to 2 Gm. of benzoin, tolu, or storax was treated with 25 C.c. of chloroform, the solution filtered, the filter washed with chloroform, and 50 C.c. of distilled water added to the chloroformic solution. The liquid so obtained was titrated with decinormal caustic soda solution, phenol-phthalein being used as indicator, and the results calculated into benzoic acid (1 C.c. N/10 NaOH = 0·0121 C_6H_5COOH). To determine the combined acid the chloroformic solution from the above-mentioned titration was separated from the water (containing sodium benzoate and cinnamate in solution) and the chloroform removed by distillation over the water bath. To the residue 50 C.c. of 2½ per cent. aqueous soda was added, and the mixture boiled for an hour under a reflux condenser. It was then transferred to a separator, and shaken with 10 C.c. of chloroform, excess of dilute hydrochloric acid then added, and the mixture agitated with 5 C.c. of chloroform four times. The chloroformic solution of the acids was next washed with several successive portions of water until the washings ceased to affect litmus paper. To the washed chloroformic solution now remaining, 50 C.c. of water was added, and titration conducted as before, the figure obtained being taken to represent combined acids, and being calculated as before into terms of benzoic acid. In dealing with the tincture, 10 C.c. was taken and evaporated at a low temperature to a syrupy consistency, 25 C.c. of chloroform was added to the residue, the chloroformic solution filtered, the filter washed, and after the addition of 50 C.c. of water, titration was proceeded with as above. The determination of combined acid in the tincture residue was performed exactly as in the case of benzoin itself.

In dealing with benzoin and tolu, a determination of alcohol-soluble matter was first made, and the results for free and combined acids calculated to a basis of 90 per cent. solubility. The following table shows the mean results obtained from an examination of several specimens of each drug:—

Drug.	Free Acid.	Combined Acid.
Benzoin (Siam)	5·29	29·51
Benzoin (Sumatra)	11·58	16·86
Storax	5·29	18·82
Tolu Balsam	18·20	22·47

The figures obtained accord fairly well with those generally accepted as representing the proportions of balsamic acids present in the drugs. A calculation made to ascertain the theoretical percentage of free and combined acids yielded to the tincture by drugs having the mean acid values given in the table yielded the following results:—

Free acid in tincture (theoretical)	1·96 per cent.
Combined acid in tincture (theoretical)	3·70 per cent.

The next table shows the results of the assay for balsamic acids of the seven samples of commercial tinctures previously referred to:—

No.	1.	2.	3.	4.	5.	6.	7.
Free Acid	1·69	2·00	1·88	1·96	1·91	2·09	2·38
Combined Acid	2·71	3·34	3·51	2·37	3·25	3·20	2·58

The mean percentages of all samples were for free acid 1·99, for combined acid 3·70, but as tinctures Nos. 1 and 4 were weak in extractive, and the proportions of free and combined acids in No. 7 were peculiar, these three samples are best left out of consideration, and the mean percentages for the remaining four tinctures noted. These are:—

Mean percentage (grammes per 100 C.c.) of free acid in tinctures	1·97
Mean percentage (grammes per 100 C.c.) of combined acid in tinctures	3·32

The calculated and actual percentages of free acid are almost identical, whilst the calculated percentage of combined acid is about 10 per cent. higher than the actual. The authors concluded by suggesting as a standard for the tincture that it should, when assayed by their process, "yield not less than about 5 per cent. of balsamic acids calculated as benzoic, out of which neither more nor less than about two-fifths should be present in an uncombined condition."

Discussion.

Mr. A. W. **Gerrard** said storax varied considerably in consistency and in odour, and, moreover, he had often detected a distinct smell of methyl, though he would not like to say that methylated spirit had been used in its preparation, for this was scarcely allowable. He agreed with the authors of the paper that the minimum standard of total solid matter in compound tincture of benzoin should be 18 per cent. He asked the authors if they made any experiments as to whether chloroform—the solvent adopted by them—would dissolve benzoates such as were contained in the crude drugs, or whether only the free acid was extracted. He noted that the combined acid was rather low, and it might be that the chloroform dissolved a little of the benzoates.

Mr. F. H. **Alcock** said he was inclined to think that the idea of percentage was often wrongly understood. The authors spoke of weight in volume, but it would make a considerable difference in the figures representing percentage if that were based on weight in weight, and might even enable inferior samples to pass the Somerset House analyst's standards. With regard to the process adopted for the free acids, he did not quite understand whether the chloroform solution of free and combined acids was treated directly with alcoholic potash in the titration. If the titration was made with aqueous or alcoholic potash on the esters and acids dissolved in the chloroform, then there would be the danger of decomposition of the chloroform by the alcoholic potash, which would render the results misleading. In a paper by himself and Mr. Thomas, published in the *Pharmaceutical Journal* (September 9, 1899) a year or two ago, it was shown that alcoholic potash and aqueous potash, when left in contact with alcohol, did bring about a change, with formation of sodium chloride and sodium formate. With regard to the purification of storax, he believed methylated ether was far more efficacious than ethylic alcohol, although somewhat dangerous because of its volatility. There was a great temptation to use unmineralised methylated spirit, and if evaporation were effected properly very little odour of methyl would be left behind. But he did not think it was legitimate to use methylated spirit for such purposes. It could not be recommended. Very flagrant mistakes had been made from time to time in making compound tincture of benzoin. He had found glycerin in samples, and he had found a low percentage of solids. The excuse offered, when attention was called to the matter, was that two kinds of the preparation were kept, one for use in veterinary pharmacy and the other in ordinary pharmacy. In conclusion, he pointed out that the authors of the paper made no mention of the presence of water in the crude drugs. It would be found that it was often present in storax to the extent of 8 per cent., and that must be allowed for in the preparation of the tincture.

Mr. J. **Poole** suggested that with regard to the seven samples spoken of seventeen would be a fairer average of the total solids than eighteen.

Mr. **Gerrard** referred to the fact that it is easy to use tolu for making the syrup and subsequently employ the residue for making compound tincture of benzoin. That practice might be prevented by fixing a standard for the acids.

Mr. **Alcock** put a question as to the temperature at which the samples were evaporated, and

Mr. **Perry** said the question of temperature was of importance, because solids went on losing weight by prolonged exposure to heat. He agreed with the authors as to the amount of total solids in the tincture being 18 per cent.

The **President**, in reply, said he did not think there was much doubt that the practice of using methylated spirit for purifying storax was occasionally adopted, and, to his mind, it would be very much better if the pharmacist on purchasing storax were to purchase the crude article and use an equivalent quantity of that. It was extremely unlikely that benzoates would be removed by the chloroform solution, but there was a possibility of some slight solution. That was a point which ought to be settled. Mr. Alcock seemed unwilling to allow the 18 per cent. standard, and quoted Somerset House, but if Somerset House analysts thought compound tincture of benzoin should contain only 14 per cent. of total solids, whether by volume or weight, then Somerset House was absolutely wrong. Anyone who was making a tincture containing 20 per cent. of ingredients which the B.P. stated must be almost entirely soluble in alcohol, could not have made it fairly if when it was finished it contained only 14 per cent. of total solids. The pharmacist had no right to use storax containing a large proportion of water. There was not much likelihood of chloroform being decomposed by contact with decinormal alcoholic potash and aqueous alkali. The evaporation of the tincture was conducted at the temperature of the water-bath, and there might, of course, be some infinitesimal loss of free acid. In conclusion, it was pointed out that Siam benzoin was now about three times the price of Sumatra benzoin, and that if sufficient Sumatra benzoin were used to allow for insoluble matter, the tincture would be better, because of the larger percentage of free balsamic acids contained in the Sumatra product, since a preparation containing plenty of free acid would be superior for medicinal uses to one containing the acids in their combined condition.

Mr. Geo. E. **Perry** next read a note on

The Determination of Fat in Milk.

He described a method for the determination of fat in milk by A. A. Bonnema. In that process 100 C.c. of milk is put into a 100 C.c. cylindrical glass and mixed with 1·5 C.c. of aqueous caustic potash (20 grammes per 100 C.c.). After shaking for a moment of 25 C.c. of ether is added, and the whole thoroughly shaken for five minutes, the glass being held in the warm hand. The glass is then placed in cold water, the stopper removed for a moment, 2 grammes of tragacanth added, and the whole again shaken thoroughly. The tragacanth absorbs all the water, and forms a clot, whilst the ether becomes quite clear. By the aid of a pipette, 10 C.c. of the ethereal solution is now removed and evaporated in a weighed dish. The results obtained by this process were compared as shown in the following table:—

No.	Adam's Process.	Tragacanth Process.
(1)	2·72 per cent.	(*a*) 2·64 per cent. (*b*) 2·67 ,,
(2)	1·08 ,,	(*a*) 0·930 ,, (*b*) 0·920 ,,
(3)	2·08 ,,	(*a*) 2·02 ,, (*b*) 1·99 ,,
(4)	3·8 ,,	(*a*) 3·78 ,, (*b*) 3·77 ,,
(5)	2·25 ,,	(*a*) 2·21 ,, (*b*) 2·30 ,,
(6)	2·74 ,,	(*a*) 2·71 ,, (*b*) 2·73 ,,
(7)	5·50 ,,	(*a*) 5·57 ,, (*b*) 5·51 ,,

In the last experiment some extra cream was purposely added to the milk. Though not absolutely concordant, the figures appear as close as can be looked for from such a process, while the process itself is easily and expeditiously carried out. The operator should take care that the stopper is not removed from the bottle before the ethereal solution is thoroughly cooled, or discrepancies from that cause may arise.

Discussion.

The **President** thought it would have been much better if the figures given in the paper had been compared with those obtained by the Berner-Schmidt method, which was more in accordance with modern practice.

Mr. **Alcock** agreed with this and suggested that the aliquot part method for the determination of fat in milk and in many other processes was not a satisfactory one, especially in the case of such a volatile thing as ether. It would be much better to remove the whole of the liquid and subsequently wash with a fresh supply to eliminate all the fat. The tragacanth plan had shown lower results than usually, as regards the amount of fat present in milk.

Mr. **Perry** next read a note on

Sweet Spirit of Nitre.

An experiment was described, which had been conducted to ascertain what advantage, if any, can be gained by keeping the spirit for dispensing and retail purposes in an inverted bottle. The spirit used, 5 C.c. of which gave 34·5 C.c. of gas, was placed in two 6 oz. stoppered bottles, 5 fl. oz. being put into each bottle. One bottle was capped with a piece of sheet rubber, and inverted, and the other placed upright on the shelf in the usual manner. Portions were taken daily from each bottle during a period of twenty-six days, the quantity at the end of that time being reduced to less than 1 fl. oz. The spirit was tested on the eighteenth day, and again on the twenty-sixth day, with the following results:—

5 C.c.	Upright Bottle.	Inverted Bottle.
First tested	34·5 C.c.	34·5 C.c.
Eighteenth day	28·5 C.c.	31·5 C.c.
Twenty-sixth day	24·0 C.c.	27·0 C.c.

It would seem from these figures that an inverted bottle has some advantage over an upright bottle for storing this spirit, and, further, that the contents of the bottle should not be allowed to run too low.

The **President** thought the curious depreciation of strength was due to oxidation or the admission of air, and any method calculated to minimise it would be acceptable to pharmacists.

Mr. **Southall** inquired whether experiments had been made to determine what influence light had upon the samples, and

Mr. **Alcock** put questions as to whether the bottles were stoppered and amber-coloured, whether Mr. Perry had observed any alteration in the specific gravity of the samples, and whether he had relied solely upon the nitrometer test. He recommended for future experiments a process which had recently found favour, *i.e.*, that of Carl Smith, which was a volumetric method, and seemed to give higher results than the nitrometer.

Mr. **Perry** replied that he was familiar with Carl Smith's method. The bottles he used were the ordinary bottles. He had not taken the specific gravity nor noted the influence of light on the deterioration value.

PHARMACEUTICAL SOCIETY OF IRELAND.

The monthly meeting of the Council was summoned for Wednesday, March 5, at 67, Lower Mount Street, Dublin, but a sufficient number of members did not attend to form a quorum. The following attended:—The President (Mr. Beggs), the Vice-President (Mr. Bernard), and Messrs. Smith and Brown.

A special meeting was summoned for Wednesday next, the 12th inst.

DEWSBURY CHEMISTS' ASSOCIATION.

The annual meeting of the Dewsbury and District Chemists' Association was held at the Church House, Dewsbury, on Monday, March 10, the retiring **President**, Mr. Walter Stead, in the chair.

The **Secretary** (Mr. G. Walker) submitted

The Annual Report,

which stated that there was a decrease in membership of two, and that the average attendance at the meetings during the year had not improved. The various questions discussed during the year were then referred to; with regard to the proposed establishment of a West Riding federation of local associations, only one favourable reply had been received to the circular sent out by the President. That was from the Huddersfield Association, both Leeds and Sheffield being antagonistic, whilst the other associations had not given definite answers. That being the case the question was in abeyance.

The annual report having been adopted,

Mr. R. **Gledhill** (Treasurer), submitted

The Financial Statement,

which showed that the receipts had been £12 18s. 11½d., and that there was a balance in hand of £2 2s. 5½d., as against £2 1s. 5½d. a year ago. This report was also adopted.

Election of Officers.

Mr. R. Gledhill was elected President; Messrs. C. Rhodes and R. Broadhead, Vice-Presidents; Mr. G. Walker, Secretary, and Mr. G. N. Gutteridge, Treasurer.

The Federation Question.

Mr. R. **Broadhead** next submitted the following resolution:—

> That the Dewsbury and District Chemists' Association, not sharing the desire for the disintegration of pharmacy which permeates all ranks of our trade, calling, or profession, declines to further subscribe to the so-called national Federation of Local Associations, the only use for which seems to be that its misleading title may be quoted as a bar to progressive organisations.

He stated that the proposed Yorkshire federation, if carried into effect, would have been nearly boundless for good. It would have helped to consolidate them in their work, and assisted them as an educational medium for the public good, and also enabled them to approach members of Parliament. He was astonished at the way the question had been taken up. Some of the replies to the circular were beneath contempt. Bradford had let them know that they were not in favour of the scheme. He was surprised at that because he regarded Bradford as a progressive association. Here was an example of inconsistency, which was rather predominant among pharmacists at present. Mr. Waddington, of Bradford, wrote to the *Pharmaceutical Journal* last week complaining that local associations were not fostered as they ought to be. Could inconsistency be carried further? If local associations ought to be fostered, a federation or combination of local associations ought also to be fostered. He did not blame Mr. Waddington personally, because he did not know whether he opposed the proposed federation. What were the objections to the proposal? The first was that the federation would be unwieldy. That was an extraordinary objection, as associations did not suffer from having too many members. The second objection to the proposal was that there was a national Federation. He had heard of a phantom called by that name, and it let them know of its ghostly existence twice a year. Once when it desired them to answer questions which were discussed in the Neolithic age, and again when the annual subscriptions fell due. He proposed the resolution as a protest against the existing Federation. It was time they withdrew from this miserable phantom of a national Federation.

Mr. **Pickard** seconded the motion, which was passed unanimously.

A vote of thanks was passed to the retiring President for his services during the past two years, and Mr. **Stead** briefly acknowledged the compliment.

ABERDEEN PHARMACEUTICAL ASSOCIATION.

The sixty-fourth annual meeting of this Association was held in Gordon's College on Wednesday, March 5, Mr. A. **Craig**, President, in the chair.

Annual Reports.

The annual reports were submitted and adopted. The Secretary's report mentioned that, notwithstanding the many changes which had taken place throughout the year, the membership—fifty-four—was the same as the previous year. The drug exchange established some months ago had not been taken advantage of to any great extent as yet, and members were requested to send in lists of any surplus stocks to Mr. W. F. Hay, who has charge of the register. The Treasurer's report showed a substantial balance to the good. The Education Committee's report referred to the satisfactory state of the evening School of Pharmacy, which was thought to be due in a great measure to the two scholarships offered by the Association of a free term at the day School of Pharmacy, as also to the interesting lectures of the teacher, Mr. G. Simpson.

The Federation Questions.

The Association then took up consideration of the questions sent in from the Federation of Local Pharmaceutical Associations, suggested by Mr. Paterson's paper read at the Conference. In reply to those questions, it was stated that the Association was opposed to a compulsory curriculum under present conditions, but in favour of dividing the Minor Examination; also that—in apprenticeship—the relationship between master and pupil should invariably be that of teacher and scholar. In an ordinary pharmacy it is impossible for a master to give his pupil all the necessary training to pass the qualifying examinations, and all that can be expected of him in the pharmacy is to train the pupil to orderly and methodical habits, to give him an opportunity of becoming practically conversant with the processes employed in making ordinary pharmaceutical preparations, and a thorough training in dispensing. Having done these things to the best of his ability, it is his duty to see that, wherever practicable, he should have an opportunity of attending classes where he may attain the scientific and technical instruction necessary to pass the qualifying examination. This may be most usefully done by chemists combining in getting such classes established and personally taking an interest in them and their success. Until the master has done that, it is not thought that he has done his duty by his pupil. Many persons are deterred from thinking of entering the ranks of pharmacy when they consider the very long hours the shops are kept open, consequently the limited time for study to meet the requirements of the examiners, which are gradually being raised. To the majority of those likely to enter the ranks of pharmacy the high examination fee which must be met at the end of the apprenticeship is no light matter. Such considerations, coupled with the poor financial prospects visible after having gone through apprenticeship, have much to do with the paucity of applicants, and the Association looks for the scarcity to continue until there is some combined action among pharmacists to bring about a better and healthier condition than presently exists, which are felt to be a grievous burden, not only by the pupils, but by the masters as well.

Election of Officers.

The following office bearers were appointed for 1902-3:—President, Mr. Andrew Craig; Vice-President, Mr. William Giles; Treasurer, Mr. James Paterson; Secretary, Mr. John Cruickshank, 42, George Street.

HUDDERSFIELD CHEMISTS' ASSOCIATION.

A meeting of the Huddersfield and District Chemists' Association was held on March 11. The **President** was in the chair. The meeting, which was chiefly occupied with routine business, concluded with a discussion on several subjects touched upon in the speeches at the recent dinner. The methods adopted in the advertising of some "patent" medicines was discussed, and a strong feeling existed that united action should be taken to repudiate the charges against the honesty of retailers which some of these advertisements implied. In some cases by both prose and picture the attempt was made to convey to the public the impression that substitution was perpetually practised by the chemist, who was represented as a man of deceit and cunning. This was an insult to the entire craft, and there ought to be a refusal to stock the productions of firms thus advertising.

A vote of condolence was passed and ordered to be sent to the widow and family of the late Mr. William Martindale, expressing sympathy with them in their bereavement.

LONDON CHEMISTS' ASSOCIATION.

A meeting of the General Purposes Committee of this Association was held on Wednesday, March 12, at Anderton's Hotel, Fleet Street. Messrs. Bunker, Burton, Bustard, Campbell, A. Cooper, Cracknell, S. Dawson, Goodall, Gulliver, Glyn-Jones, R. H. Jones, Pentney, Philp, Pickering, Pond, Truman, and Willson were present.

Mr. Albert Cooper (S. Kensington) was elected Chairman of the Committee, Mr. Glyn-Jones Vice-Chairman, Mr. Pond Treasurer, and Mr. R. H. Jones Hon. Secretary.

A sub-Committee was appointed to take steps to form a local committee in South London.

OXFORD CHEMISTS' ASSOCIATION.

The annual meeting of the Oxford and District Chemists' Association was held on Tuesday, March 11, 1902, at the Golden Cross Hotel, the **President**, Mr. C. Clayton, in the chair.

The **Hon. Secretary** presented the annual report and balance-sheet, showing a balance in hand of £7 18s. 11d. Mr. **Palmer** moved the adoption of the report, which was seconded by Mr. **Squire**, and carried unanimously. The following members were elected officers for the ensuing year:—President, Mr. T. J. A. R. Burbank; Vice-Presidents, Messrs. Clayton and Jessop; Hon. Secretary and Treasurer, Mr. John Dolbear; Committee, Messrs. Squire, Mathews, Prior, and Druce.

HALIFAX CHEMISTS' ASSOCIATION.

A meeting of the Halifax and District Chemists' Association was held at the Old Cock Hotel, on Tuesday, March 11, the **President**, Mr. G. Dixon, in the chair.

Mr. C. **Fielding** gave a lecture on "A Pharmacist's Continental Holiday," recalling a pleasant tour he had made viâ Grimsby, Rotterdam, the Hague, Cologne, Coblenz, Namur, and Brussels. About 100 photographs, taken during the tour, were exhibited, as well as a collection of conchological specimens which had been made at the same time. Reference was made to a visit to the Bayer factory at Elberfeld.

Mr. G. M. **Cobb** proposed a vote of thanks to the lecturer, and Mr. C. **Dixon** seconded.

Mr. Lord J. Russell (Wilkinson's) and Mr. Davies (Evans's) were elected members of the Association.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

SYNTHESIS OF METHANE.

P. Sabatier and J. B. Senderens describe a new method for the synthesis of methane, based upon the extraordinary catalytic power, with regard to the addition of hydrogen, possessed by metallic nickel reduced from its oxide at as low a temperature as possible. Various syntheses have been effected by this reaction, and it is now stated that methane can be produced by passing over reduced nickel at 250° to 300° C., either carbon monoxide or dioxide mixed with a slight excess of hydrogen, thus—

$$CO + H_6 = CH_4 + H_2O$$

or

$$CO_2 + H_8 = CH_4 + 2H_2O$$

It is apparent that methane can thus be formed from its elements in two stages only.—*Comp. rend.*, **134**, 514.

NEW SUPPOSITORY BASIS.

E. Crouzel refers to the difficulty of preparing suppositories containing certain vegetable extracts, organic and inorganic salts, etc., with cacao butter as basis, so that the medicament may be distributed evenly throughout the mass. He proposes the following formula for a basis which is in every way reliable :—

Paraffin	1 part.
Lanolin anhydrous	3 parts.

The proportion of active ingredient (soluble in water) which it is possible to easily incorporate with this basis may be calculated from the following datum :—Anhydrous lanolin absorbs its own weight of water or saturated saline solution, or solution of vegetable extracts. The advantage claimed is that the dosage is more accurate.—*Répertoire de Pharmacie*, 1902, 8.

AZUCÁ-CAÁ, OR CAÁ ÊHÊ.

A plant bearing this name, which seems to deserve chemical investigation, has been sent to the Royal Gardens, at Kew, by Mr. Cecil Gostling, H.B.M. Consul at Asunçion, Paraguay. It possesses the remarkable property of causing a sensation of sweetness in the mouth, even a small particle of the leaf producing, when chewed a much more persistent sensation of sweetness than could be stimulated by a much larger piece of cane sugar. Dr. Bertoni, an Italian botanist, and director of the Agricultural College at Asunçion, has named the plant *Eupatorium rebaudianum*, but the authorities at Kew consider, from the flowers that they have been able to examine, that it belongs rather to the genus *Stevia*. Dr. Bertoni's description of the plant is given in the 'Kew Bulletin,' No. 175-77, p. 173. In the early volumes of the *Pharm. Journal* two other plants possessing similar properties were described by the late Dr. Daniell. One of these, now known as *Thaumatococcus daniellii*, Benth. (Nat. Ord. Scitamineæ), and called by him the miraculous fruit of the Soudan, appears to contain the saccharifying property in the aril of the seed (*Pharm. Journal* [1], **14**, 158-161). The other is the fruit of *Sideroxylon dulcificum*, A. D.C. (Nat. Ord. Sapotaceæ). "The seeds are clothed with a thin softish pulp," in which the saccharifying principle appears to be contained. But in this case, if the fruits are over-ripe or kept for any time, the property appears to be lost (*Pharm. Journal* [1], **11**, 445-448). A few years ago some fern leaves were sent over in small quantity from S. America, which possessed an intensely sweet taste, but this appeared to be due to a new sugar, which was, however, obtained in too small quantity for thorough analysis.

DETECTION OF CAFFEINE.

A. Nestler publishes a simple method for the micro-chemical detection of caffeine, which is rapid and requires only a small amount of the original material. A tea leaf, or a similar quantity of the substance to be examined, is placed on a watch glass, covered with another watch glass of similar size, and heated for five minutes over a small flame, the glasses being supported on wire gauze about 7 Cm. above the source of heat. The upper cover glass will then be found to show numerous droplets of condensed liquid, in ten minutes, fine needle-shaped crystals will appear, and after fifteen minutes a good crop of these will be shown on microscopical examination. Exhausted infused tea leaves show no sign of such crystalline sublimate. Coffee berries, and the leaves of the coffee plant, kola nuts, guarana, and maté were all found to give a characteristic sublimate of caffeine when treated in this manner. By applying cold water to the outside of the upper watch glass, the appearance of the crystals may be materially hastened. That the sublimate consists of caffeine may be proved by the usual chemical reagents.—*Zeits für Untersuch. der Nahr. und Genussmittel*, **4**, 289.

POTASSIUM HYDRIDE.

By heating fine threads of metallic potassium in a current of pure hydrogen, in a glass tube, to a temperature of 360° C., H. Moissan has succeeded in obtaining, in the cooler portion of the tube, a crystalline sublimate of potassium hydride, KH, in the form of delicate white needles. Potassium hydride is one of the most unstable bodies known. It combines at once with atmospheric moisture liberating hydrogen and potassium. It decomposes in cold water without incandescence, hissing like a red hot iron, with the tumultuous evolution of hydrogen. It is insoluble in turpentine, benzene, ether, and carbon disulphide. Its density is about 0·80. It decomposes when heated *in vacuo* to below a dull red heat. It immediately ignites on contact with fluorine, and with oxygen, and becomes incandescent in chlorine, and takes fire immediately in atmospheric air. It becomes incandescent when heated with CO_2, and at slightly higher temperature with H_2S. It does not combine with liquefied ammonia at ordinary pressure, but in a sealed tube it forms a compound soluble in excess of ammonia, and when heated in a current of gaseous ammonia to 400° C. it forms potassium amide.—*Comptes rend.*, **134**, 18.

STRONTIUM HYDRIDE.

By heating an alloy of metallic cadmium and strontium, containing 45 per cent. of the latter metal, in a boat of compressed magnesia, in a current of hydrogen, Henri Gautier has succeeded in obtaining strontium hydride, SrH_2, in the form of a white solid body, which is readily decomposed by water, liberating hydrogen, and forming strontia. In its general behaviour it resembles CaH_2 previously described. In the cold it is not attacked by chlorine, but on gently warming it combines with that gas, forming $SrCl_2$, and liberating HCl. It is unattacked by liquid bromine even on boiling, but at a dull red heat it combines with the vapour of bromine, with incandescence. Iodine and sulphur combine with it at the same temperature. Oxygen, especially when combined with metals, as in the chlorates or perchlorates, combines with the hydride with explosive violence. With iodates the reaction is less violent. Chromates are rapidly reduced, when a mixture of powdered SrH_2 and $K_2Cr_2O_7$ is ignited the mixture becomes incandescent, and the bright green residue consists of a mixture of strontia and chromium sesquioxide. Metallic oxides are also energetically reduced by strontium hydride.—*Comptes rend.*, **134**, 100.

LABORATORY NOTES.*

BY GEORGE F. MERSON, F.C.S.

Collodion of Belladonna, B.P.C.

The value of the Unofficial Formulary issued under the auspices of the B.P. Conference is recognised by everyone, and anything which tends to enhance its value, whether by modification of formulæ or by simplification of manipulative details, is worthy our attention. The work is looked upon as a feeder for the British Pharmacopœia, and as far as possible, in compounding the preparations named therein, the official products should be adhered to as closely as may be consistently with the object in view. A case in point is collodion of belladonna. The directions are to use alcoholic extract of belladonna leaf, a quantity containing 44 grains of total alkaloids; dissolve in alcohol, etc., etc. This necessitates a formula for alcoholic extract of belladonna leaf, likewise a cumbersome and tedious standardisation process, and to what purpose? That a certain amount of chlorophyll may be introduced and the finished product made pleasing to the eye? The British Pharmacopœia provides for a standardised belladonna "basis" in the fluid extract, containing 0·75 per cent. alkaloids, and from this, either directly or indirectly, a series of official preparations is made comprising:—

(1) A plaster	with an	alkaloidal	content of	0·50	per cent.
(2) A solid extract	„	„	„	1·00	„
(3) A liquid „	„	„	„	0·75	„
(4) A liniment	„	„	„	0·375	„
(5) A tincture	„	„	„	0·05	„
(6) An ointment	„	„	„	0·60	„
(7) A suppository	„	„	„	1/60 grain.	

Why then cannot a collodion be also included? The strength specified in the Conference Formulary for this preparation is 0·5 per cent. total alkaloids, corresponding to the official plaster.

Although doubtless convenient there is no special reason why it should not correspond in strength to the liniment, viz. 0·375 per cent., or half that of the official fluid extract

I would suggest, then, for your consideration the following formula as being therapeutically active, elegant in appearance, and simple of preparation:—

Take of—

Fluid extract of belladonna	10 ozs.
Purified ether (s.g. 0·720)	10 ozs.
Liquid chlorophyll of commerce	½ oz.

Mix and shake well; stand for twelve hours, decant, filter "foots," and in the mixture dissolve:—

Camphor	130 grains
Pyroxylin	½ oz.

The product should measure one pint.

Thus prepared, a brilliant and elegant fluid plaster is obtained equal in every respect to that made from the B.P.C. Formulary process from the green leaf extract, and with very much less trouble.

It is inadvisable that the collodion should be finally made up to bulk with equal parts of spirit and ether, as the stronger alcohol will precipitate a certain proportion of the brown inert extractive of the liquid extract of belladonna, and render the finished article somewhat cloudy.

The ether used dehydrates, to a certain extent, the belladonna extract. Part of the water in the 70 per cent. alcohol menstruum is thrown out of the solution on the addition of ether, and settles at the bottom of the vessel, together with colouring matter, in the form of an oily brown deposit. This may be filtered out at once, but it is preferable to allow the mixed liquids with the chlorophyll in solution to stand twelve hours, when the clear green supernatant part can be completely decanted from the deposit. The liquids being well shaken after mixing ensures that no appreciable amount of alkaloid is carried down with the oily deposit.

Collodion of belladonna is eminently suited for use in place of ordinary circular breast plasters. It adheres much more closely, is more cleanly, and when made of the strength suggested will, on account of these qualities, be quite as efficient therapeutically as an ordinary spread plaster of 0·5 per cent. alkaloidal content.

I am not prepared to say that the collodion *should* have added to it, with advantage, a proportion of Canada balsam or castor oil to render it less contractile, but I am of opinion that increased comfort would accrue to a patient were this done. Even allowing for less contractive properties, the flexile variety would still be more effective than a spread plaster on wash leather, muslin, or other material.

I need scarcely add that if objection is seriously taken to having the strength reduced from 0·5 to 0·375 per cent. of alkaloids (although I do not see why it should be so, seeing that the green plaster, to be noticed presently, contains but 0·25 per cent., or half the proportion present in the official plaster), an easy modification by which the full 0·5 per cent. of alkaloidal content is secured is as follows:—

Take of liquid belladonna 13⅓ oz. Evaporate on a water-bath till, when cold, a soft extract remains—a definite weight might be stated. Dissolve this extract in equal and sufficient volumes of 90 per cent. alcohol and purified ether, adding a due proportion of chlorophyll, stand, decant, and in this dissolve the camphor and pyroxylin. Product, one pint.

While popular fancy demands a "green" belladonna plaster, there is no such reason for adding any colour to the collodion. Why have chlorophyll at all? It is therapeutically inert, and a collodion prepared as indicated above, but omitting the chlorophyll, would be equally serviceable and much more cleanly to use.

Green Belladonna Plaster, B.P.C.

Emplastrum Belladonna Viride, B.P.C., is in the Formulary directed to be made from the first-named green alcoholic leaf extract of a strength of 0·25 per cent. alkaloids, or one-half that of the official extract of belladonna. The same objection as in the case of the collodion holds good in this case. A special leaf extract is to be made, and a complicated assay process gone through. I would suggest that the formula should read as follows:—

Liquid extract of belladonna	4 ozs.
Evaporate to 1 oz. and add	
Liquid chlorophyll	½ oz.
Resin plaster to produce	12 ozs.

Mix.

The popular demand for a "green" belladonna plaster renders it advisable that such a plaster of standard potency should be obtainable, but no such reason exists in the case of the collodion.

Extract and Tincture of Indian Hemp.

In making tinctures from resinous substances such as benzoin, tolu, *Cannabis indica*, etc., I have been accustomed to somewhat modify the official directions given in the Pharmacopœia (see *Pharm. Journal* [4], **12,** 209), using a small proportion of the spirituous menstruum to effect solution of the softened resins, then adding the remainder of the solvent and allowing to stand a few hours before decanting or filtering.

This method has not given uniformly satisfactory results with commercial samples of extract of *Cannabis indica*. Some of these aggregated into oily clots on warming with the spirit and stubbornly refused to disintegrate. *Cannabis indica* is notoriously an unsatisfactory therapeutic agent, and there is the more need that such extract as we have should be as uniform in composition as possible. I do not propose at all to touch upon the chemical composition of the active constituents of Indian hemp. It is generally conceded that its therapeutic value lies in the resin or resins present, therefore for the preparation of the tincture an extract of purified resins is to be preferred to one containing a doubtful and variable amount of extractive insoluble in alcohol.

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* Communicated to the Pharmaceutical Society of Great Britain at a meeting held in Edinburgh on Wednesday, March 19, 1902.

Commercial extracts which have come under notice vary much in their physical characters, some being almost syrupy, others quite a firm mass; some brilliant green in colour, others again dark olive. A series of commercial tinctures examined showed the same lack of uniformity.

Theoretically the yield of dry extract from the tincture should be 5 per cent. weight in volume, but this in practice is not obtainable. Extracts I have examined lose from 5 to 14 per cent. of their weight, as water, on drying in the water-oven. Not two samples are alike. This depends partly upon the age of the extract, but in greater part to the varying amount of water-soluble extractive admixed with the resinous or alcohol-soluble portion.

On evaporating a small quantity—1 to 5 C.c.—of tincture in a flat bottomed porcelain capsule on the water-bath, after the spirit is dissipated, it is noticed that the residue consists of a greenish film interspersed with globules and streaks of brown colour. The green film is immediately soluble in ether, whilst the brownish is insoluble but soluble in water. Observation of the want of uniformity in these tincture residues indicated a possible explanation as to why some commercial extracts were more easily soluble than others in making the tincture. Squire states that the extract (resin) by prolonged heating, even on a water-bath, becomes brown and insoluble in 90 per cent. alcohol, but soluble in water. On looking at an ordinary extract all trace of this brown extract is masked by the green of the chlorophyll and resin, as it is distributed through the bulk in a finely divided condition. A small quantity of extract heated in a capsule on a water-bath for some time separates into two distinct layers—the uppermost bright green, the lower dark brown. Ether immediately dissolves the upper, leaving the lower untouched. It, however, yields readily to cold water. The ether-soluble portion evaporated to dryness and exposed to water-bath temperature for several hours showed no change except a slight dulling of the bright green of the chlorophyll. No water-soluble portion separated. One specially good sample of extract was entirely soluble in ether, and a portion kept in a water-oven at water-bath temperature for three days showed practically no change. It was still easily and completely soluble in ether, whilst no water-soluble portion was formed.

Indian hemp percolated with ether (s.g. 0·720) is readily exhausted, and on evaporation yields from 10 to 12 per cent. of a firm, non-hygroscopic, green extract, which loses practically nothing on drying in the water-oven. The exhausted marc dried in the air, and percolated with 90 per cent. alcohol, yields a small quantity of brown extract soluble in cold water. Another portion of the same marc with absolute alcohol gives no residue on evaporation of the percolate, showing that the small quantity of extract obtained by 90 per cent. alcohol is due to the water in the alcohol, not to the alcohol itself. The ether exhausted marc percolated with water yields 10 to 15 per cent. of dry extract. This extract is hygroscopic, and will therefore cause an extract containing much of it to vary in the percentage of moisture present. Thus ether and water, successively used, exhaust *Cannabis indica*.

The present Pharmacopœia directs the extract to be made by exhausting the powdered hemp by percolation with 90 per cent. alcohol. This is not readily done. A relatively large quantity of alcohol is required before the percolate passes free from green colour, moreover, the water present in the spirit continues to extract some of the brown water-soluble matter. If these successive percolates are mixed and evaporated to a suitable consistence there will naturally be a considerable proportion of this brown extractive present in the finished product. Obviously, then, the proportion of matter insoluble in 90 per cent. alcohol (as in making the tincture) will vary according to the quantity of spirit used in extraction.

On evaporating the percolate it will readily be noted that, after the bulk of the spirit has been removed, a brown watery liquid, with clots of resin suspended in it, and adhering to the sides of the dish, results. Continued evaporation, with stirring, converts this into a fairly uniform green extract, which will, however, again separate on heating without stirring.

The 1885 Pharmacopœia directed the extract to be made by maceration in a fixed quantity of rectified spirit, the liquid being pressed off, the spirit recovered, and the product evaporated to a suitable consistence. This method is preferable (or percolation with a fixed volume of menstruum may be used), inasmuch as the proportion of water-soluble matter is likely to be fairly constant in different samples of the commercial extract. Examples of variation in commercial samples are noted below:—

(1)	Percentage of dry extract soluble in ether ..	Entirely.
(2)	,, ,, ,, ,, ..	Entirely.
(3)	,, ,, ,, ,, ..	92.
(4)	,, ,, ,, ,, ..	88.
(5)	,, ,, ,, ,, ..	70.
(6)	,, ,, ,, ,, ..	60.
(7)	,, ,, ,, ,, ..	47.
(8)	,, ,, ,, ,, ..	46.

No. (1) is an extract make by myself with an absolute alcohol menstruum, and will be noticed later.

No. (2) is a syrupy extract which lost nothing or very little on drying in a water-oven, but which smelt somewhat of methyl spirit. I have not had time to examine it further with a view to finding whether any methyl reaction is obtainable. I incline to the opinion that it has, like No. (1), been made with a stronger spirit than 90 per cent.

The above figures are arrived at by treating a small quantity of dried extract with successive portions of ether, 0·720, filtering and evaporating to constant weight. The difference between the percentage soluble in ether and 100 need not necessarily represent insoluble matter, but will include moisture as well. This latter should be estimated before treatment with ether, then by difference the real proportion of insoluble matter will be obtained. If this precaution is not taken some part of the water-soluble extract may, with water, find its way into the ethereal extract and vitiate the result. Several samples of tincture examined gave varying yields of dry extract as follows:—

		Per cent.
(1)	Yielded	4·75.
(2)	,, ...	4·4.
(3)	,, ...	4·10.
(4)	,, ...	4·0.
(5)	,, ...	3·8.
(6)	,, ...	3·6.
(7)	,, ...	3·5.
(8)	,, ...	3·2.
(9)	,, ...	3·0.

No. (1) was made from an absolute alcohol extract (already noted), and No. (2) from the corresponding extract in previous table. All the others contained more or less of brownish extract, which was not dissolved on treating the dried residue with ether. The difference in colour observed in these tinctures was very marked, the tint varying from bright green to dull olive or almost brown. This is no doubt due in part to the age of the herb used in making the extract. I find that bright extracts do not invariably yield most resin to ether. As a result of my experiments, I am inclined to suggest, in place of the present official extract, an ethereal one, like male fern, or better still, one made by extraction with absolute alcohol. The solubility of experimental lots made with these menstrua was tried, and that made with absolute alcohol was the more satisfactory of the two. It, however, was not entirely soluble in 90 per cent. alcohol, but was readily and completely dissolved in spiritus ætheris, B.P.

I then suggest that a more uniform tincture of *Cannabis indica* would be obtainable from an extract made by exhaustion with absolute alcohol, using spiritus ætheris, B.P., as a menstruum in which to dissolve it. One reason for doing this is that as much as 9 per cent. of the residue left, after making the tincture with 90 per cent. alcohol, is soluble in ether.

Professor George Murray, M.D., of the Durham University College of Medicine, has expressed the opinion to me that the small dose of ether in such a tincture would not appreciably interfere with its action, and he has consented to compare its therapeutic value with that of the present official tincture.

In conclusion, I may remark that, as far as the present tincture is concerned, it might with advantage be stated in the directions for making, "Filter and wash with sufficient alcohol to produce the required volume," correspondingly less spirit being used in which to dissolve the extract.

IS TINCTURE OF DIGITALIS A STABLE PREPARATION?*

BY J. GORDON SHARP, M.D.

There is a tradition among pharmacists and medical men, handed down from antiquity, to the effect that tincture of digitalis is one of those preparations which cannot be relied upon. This view has laid such hold upon us that it has almost become an article of faith. The consequence of this belief is, the fresh infusion has been instead recommended by some, while others have advocated the employment of the active principles of the drug, while others, again, have pinned their faith to the dried leaf in pill form. What is the probable origin of this view? Judged by solubility of active bodies, the tincture should be a better preparation than the infusion, for the infusion must contain chiefly digitalein and digitonin, and only traces of digitalin and digitoxin. Now, we know digitonin is allied to saponin, and it has much the same action; that is, it has no peculiar digitalis action at all, so that even the best infusion only contains one of the three active principles—namely, digitalein. The tincture, on the other hand, contains large proportions of digitalin and digitalein, with a smaller, but still an appreciable, proportion of digitoxin, with traces of digitonin, the saponin-like glucoside.

The belief of instability of the tincture may have had its origin in the brain of some apothecary who, knowing that alcohol splits up glucosides, concluded that a dilute alcoholic tincture of foxgloves must soon become inert. But nowadays we know by experiment the glucosides of digitalis and the other active principle which is allied to a glucoside—namely, digitoxin, have to be boiled in presence of strong alcohol and a mineral acid before they are readily split up.

The evil repute which the tincture possessed led me to shun its use till I began to examine for myself, and during the past four years I have been experimenting with the preparation. I find the tincture keeps as long as any tincture in such frequent request is expected to be kept. My latest experiment was as follows:—In August of one year I obtained a supply of tincture in the ordinary way of trade, without mentioning that it was to be employed for experiment. At the time of buying I cannot therefore say how old the tincture was, but I shall suppose it was freshly prepared. Up to November of the following year this preparation was opened, exposed to the air, and used in the ordinary way. At the beginning of November it was specially tried in a suitable case and was found pharmacologically active in ten minim doses. This particular case was one of cardiac dropsy, which had resisted every other line of treatment. In less than thirty-six hours, at the rate of ten minims every six hours, the pulse rate was reduced, diuresis was established, the dropsy disappeared, and the patient regained her usual health.

Here, then, we have a tincture at the end of at least fourteen months—and in the interval frequently exposed to the air—pharmacologically active in medium doses. I do not think any pharmacist would keep a stock to last longer than fourteen months. My contention, then, is that tincture of digitalis is a stable preparation.

It will be seen I assume the pharmacist knows his business and prepares the tincture from leaves that are active. The collection of the leaves at the proper time—that is, at the period when they contain the largest amount of active principles—and also the drying of the leaves are duties generally outside the domain of the town dweller. The duty of selecting sound, active leaves must rest with the pharmacist. What tests must he apply? My remarks in this direction, let me say, are intended for the general pharmacist, and not for the technical chemist of the large manufacturer.

First, the working pharmacist cannot employ any pharmacological or physiological test, and, even if he could, I don't think I should attach any great importance to physiological tests in view of our present knowledge of the chemistry and pharmacology of digitalis. I attach more importance to other and simpler tests:—

(1) The fermentation test, founded on the fact that every living tissue, animal and vegetable, contains a ferment or enzyme. The vegetable enzymes, if dried at ordinary temperatures, can be preserved for years, provided they are kept from damp. In a moist atmosphere they again become active and readily attack and decompose glucosides associated with them in the same plant, the ferments themselves also undergoing decomposition. Now, if one found a specimen of digitalis leaves containing an active ferment, one might reasonably conclude that the glucosides were likewise intact. This could be arrived at by the action of the moistened leaves on amygdalin. Dissolve twenty grains of amygdalin in one fluid ounce of water at 90° F. (37° C.). Place in a wide-mouthed bottle in a moderate temperature and set aside as a control specimen. In another bottle dissolve a similar quantity of amygdalin under similar conditions, and add to this specimen 60 grains powdered digitalis leaves. Shake up and set aside at a moderate temperature. Examine both at the end of eight hours. The plain amygdalin solution should show no change, but the specimen to which the digitalis has been added should have a bitter almond odour, and if a piece of glass have a drop of nitrate of silver solution smeared over it and then laid over the mouth of the bottle, a white film of silver cyanide should appear in five minutes, showing the presence of hydrocyanic acid in the bottle. I need hardly say the ferment contained in the plant will have split up the glucoside amygdalin. So much for the rough test. This might be followed by confirmatory tests.

(2) One might employ the method suggested by Rutherford Hill in another connection. A small quantity of tincture is prepared with 60 per cent. alcohol. Such a tincture should not at once reduce Fehling's solution, and, even after a few minutes' boiling, there should not be marked reduction. This test would show that the glucosides were not decomposed. Next, there is a positive variation of this test, although I think it is hardly necessary to follow the point further. A

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* Communicated to the Pharmaceutical Society of Great Britain at a meeting held in Edinburgh on Wednesday, March 19, 1902.

given quantity of the best tincture might be dried at ordinary temperature, the resultant extract treated with alcohol, boiled in presence of a mineral acid, and tested quantitatively with Fehling's solution. By this means a good working rule could be established. Of course, a quantitative analysis with Fehling could not give the amount of digitoxin, because it is not a glucoside; but where a fair glucosidal test was obtained, a corresponding proportion of digitoxin might safely be assumed. As I have already said, these observations are offered rather to the working pharmacist than to the technical chemist or specialist.

THE STAMP ACT AND ITS DIFFICULTIES.*

BY LEO ATKINSON.

A widespread feeling of unrest and uncertainty has been created by the activity of the Inland Revenue authorities, and some apparently anomalous decisions in regard to the wording of labels. Few pharmacists of any lengthened experience have not at some time or other felt the difficulty of keeping clear of conflict with the Board of Inland Revenue. Notwithstanding this constantly recurring trouble there is no record of any united effort having been made to approach the Board with a view to getting some of the difficulties of the Stamp Act more clearly defined. From time to time alterations in the interpretation of the wording of labels entails much inconvenience and loss. Unfortunately, the method of bringing any change of opinion into notice is by laying an information against a few chemists, sometimes the cases get publicity in the trade journals, but too frequently the victim pays a mitigated penalty and keeps the matter to himself. Hence the process has to be repeated until penalised individuals make public the intention of the Board.

The most cursory examination of the correspondence in our journals reveals the existence throughout the trade of a very elementary acquaintance with the provisions of the Stamp Act, and, moreover, considerable misapprehension in regard to the action of the authorities. So far back as I can remember, certainly going to 1860, the method of procedure on the part of the authorities was precisely on the same lines. At that date there were few, if any, chemists' associations. Trade journals were practically non-existent, whilst the Pharmaceutical Society was a voluntary and limited institution. In these circumstances, the Inland Revenue inspectors could raid county after county with impunity. In our own time what really happens is this, that if the inspectors do not periodically rouse chemists to a sense of their duty the Revenue suffers. Apathy on the part of the department begets a corresponding apathy on the part of those who, either through carelessness or wilfulness, do not stamp dutiable medicines. After the trade is made thoroughly alive to its obligations, matters quieten down until the next rude awakening.

There is a prevailing idea that recent troubles have their origin in departmental changes of the chief officials, whose opinions are not in agreement with their predecessors. No doubt there is a certain amount of truth in this; indeed, it could not be otherwise. Consider the rapid evolution of the trade in packed pharmaceuticals; this innovation has necessarily taxed the ingenuity of the label writer to differentiate his labels from those of his competitors. As a consequence, the border line is frequently overstepped, and penalties ultimately follow.

The object of this meeting is to ascertain if in the present administration of the Act we have any legitimate ground for complaint. Whether the Act itself might be beneficially amended, and, if so, what steps should be taken for amelioration.

For the guidance of their own officials the Board issue the following concise summary of the Act:—

A medicinal preparation cannot be sold unstamped, without involving liability to penalty, unless care has been taken to avoid any expression or phraseology which can be construed as representing:—

(1) That the preparation of the medicine is a secret, or that the medicine is the specialty of any person, or that it is made in conformity with any special recipe.

(2) That it is the preparation of any particular person, or that anyone has a proprietary right in its manufacture or sale, for example, "Smith's Liver Pill," "Neuralgic Tincture, prepared only by Jones."

(3) That it will prevent, cure, or give relief in any disorder.

All such expressions must not only have been avoided on the label itself, but also in all references to the medicine, whether on the label, wrapper, or cover, or in any printed manuscript matter whatever, including newspapers, handbills, posters, show cards, advertisements, almanacs, lists, etc., inasmuch as although the labels by themselves may not render the preparations to which they relate liable to duty, the preparations may be made so liable by the publication of other printed or written matter.

Classifying the complainants from my own correspondents and from the correspondence in the Journals, I do not find a single example of a penalty being demanded except for a distinct breach of one or more of the preceding requirements. I will briefly refer to and comment on some of the examples.

Using More than Two Words Descriptively.

In 1895 a label, "Bronchial Lozenges for Throat and Voice" was passed as not liable. In 1897 this opinion was rescinded, and only two descriptive words allowed, Bronchial and Voice Lozenges, Throat and Voice, etc. The growing tendency to use an unlimited number of words suggesting a number of complaints made it necessary to draw the line. "Headache, Stomach, and Liver Pills" now liable; "Headache and Liver Pills," "Stomach and Liver Pills" not liable.

Using the Definite Article.

Obviously *the* liver mixture suggests this to be the only curative mixture, superior to similar preparations. A claim of superiority incurs liability.

Qualifying Adjectives Implying Specialty.

Inimitable, effective, reliable, celebrated, magic, etc. "Celebrated" has been a general rock of offence, yet I find in correspondence with the Board in 1885 all labels in which the word "celebrated" appeared were marked liable. It has been suggested a good defence might be raised in some of these cases. This does not commend itself to my judgment. There could be no finality in any decision in regard to one particular adjective; the contest could and would be renewed over other qualifying adjectives, resulting in a mere legal squabble over discrepant definitions of British lexicographers. As a matter of fact, it is a concession on the part of the authorities to permit the use of some designation or name which shall distinguish one medicine from another, such as liver mixture, influenza mixture, etc.

Wording Implying Manufacture According to Some Special Formula.

Some years back a label passed by the Board was at a later date altered in accordance with their suggestion; this, again, two years afterwards, was condemned. I endeavoured to ascertain at the time whether wording "recommended," "advised," "ordered" by eminent physicians, the faculty, etc., constituted liability. The opinion of the authorities was definite—that such wording did not. This opinion now appears to have undergone modification. The attitude of the Board, and their alteration of opinion, probably arises in this way: That very frequently, when a label is just on the border line, they have refrained from taking action. Owing to their leniency, they find someone almost invariably improves the occasion by additions to the original until they are compelled to vindicate their position.

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* Read before the Western Chemists' Association (of London) on Wednesday, March 19, 1902 (see p. 247).

Pharmacopœia Preparations with a Recommendation.

The most general complaint relates to these, "Sal volatile, useful for flatulence"; "Ipecac. wine, a teaspoonful in cases of croup," etc. There is a popular idea that Pharmacopœia preparations should be exempt from stamp duty. At first sight this is extremely plausible; on more critical examination any attempt to obtain such a concession seems to be fraught with danger, if not positively inimical to the interests of the legitimate pharmacist; at all events, until you can get statutory powers restricting the sale of Pharmacopœia preparations to registered chemists and druggists. Assume Pharmacopœia preparations to be exempt, would it not inevitably follow that packers of cheap pharmaceuticals would immediately supply every petty grocer, oilman, and huckster with this class of goods, labelled with flaming recommendations for every ailment curable by *Magenta pills* or *Hepatic Haricots*? The lack of description appeals to me as a positive advantage. In the absence of descriptive labels the purchaser is more likely to seek information, and by being brought into verbal communication with the vendor, appreciate his knowledge, intelligence, and care. As a steadfast believer in the personal element this is an advantage not to be lightly bartered away.

Perhaps in this connection I ought to refer to the suggestion prominently noticed in the official Journal to the effect that the exempting clauses do actually include exemption of Pharmacopœia preparations, and confine the sale to surgeons, apothecaries, and duly qualified chemists and druggists. Quoting as much as is necessary, the clause runs: "All medicinal drugs whatsoever vended entire without mixture by any surgeon, apothecary, chemist and druggist, etc., *or by any person whatsoever licensed to sell any of the medicines chargeable with a stamp duty* [The exempting clause therefore clearly includes anyone who holds a 5s. licence], and also all medicines, preparations, compositions having different properties, qualities, etc., which shall be vended by any such surgeon, apothecary, chemist and druggist, etc., *aforesaid* . . . the different mixtures and compositions are known and admitted and approved of in the cure or relief of any disorder, ailment or complaint incident to or affecting the human body, and wherein the person mixing, preparing, uttering, or vending hath not, nor claims to have any secret or art, nor claims any title, and which mixtures, etc., have not, are not, nor shall hereafter be vended or exposed for sale by any written or printed paper, etc., or held out or recommended to the public by the vendors thereof as nostrums or as specifics, or as beneficial for the prevention, cure or relief of any ailment or complaint as aforesaid." The exemption, therefore, in respect of known and approved medicines (including B.P. preparations) only applies so long as there is no recommendation.

Counter Bills, Almanacs, etc., are Responsible for Many Penalties.

Liability by association is often difficult to determine. A chemist's literary matter requires careful revision to see that he is not raising claim to specialty or proprietary right indirectly.

The Method of Stamping Medicines Must Insure Defacement or Destruction of Stamp.

The Act in regard to this is perfectly clean and distinct, but this section of the Statute never seems to have been seriously entertained until recently. It is evident the insistence of a literal compliance, if actually practicable, would necessarily disorganise the entire wholesale and retail trade for many months. It seemed improbable the Board could be acquainted with many trade details which might materially influence their opinion if properly explained. The very essence of the law I believe to be common sense. Recognising this and altered conditions, we have to thank the Board for a most useful concession.

Doubtless much of the foregoing has been remarked upon from time to time in the trade journals, but apparently in a detached or desultory manner which has failed to attract sufficient attention. An association like this can effect much by giving prominence to matters of this kind affecting the entire craft, and by discussion elucidate the guiding principles of the Stamp Act, so that pharmacists should have little difficulty in avoiding trouble with the authorities.

Reviewing our position impartially, I suggest the following concessions as desirable and suitable for discussion.

According to the Statute, verbal expression of opinion or recommendation of a medicine or pharmacopœia preparation incurs liability. This has never been clearly defined. What latitude is the Board prepared to allow? The dispensing of physicians' prescriptions wholly consisting of some proprietary medicine is attended with extreme difficulty. The physician does not wish his patient to know he is prescribing some popular nostrum, yet his patients' attention is directed thereto by the presence of the stamp. The dispenser is referred to. What is his duty? If reasonably represented, the Board might be prepared to meet this difficulty. As an example, *Ung. Resinol* is a trap for the unwary. It is unquestionable that whenever prescribed the container should bear a duty stamp proportionate to value; yet the proprietors quite omit to note this important fact either to the profession or the trade. The sale of entire drugs (with recommendation) by traders not holding a patent medicine licence is very extensive. The authorities might usefully employ surplus energy in that direction.

Could the Board be induced to only license registered chemists and druggists, making up for any loss of Revenue by raising the licence to £1, and furthermore make foreign proprietaries chargeable with double duty bearing a distinctive stamp indicating foreign origin?

The difficulty in regard to conflicting opinions from the authorities on the *same label* is unsatisfactory, and might reasonably be brought under notice. We must remember there is no obligation on the part of the authorities to give any opinion. If I remember rightly, this was conceded some twenty years ago, following one of the general bi or triennial awakenings. It is scarcely possible that each label submitted could come under the same official's notice; hence uniformity of opinion is not to be expected. We might, perhaps, ask that in all such cases no penalty should be exacted. I am by no means sure that this is not already the practice; in my own experience it certainly has been so. Personally I have come to regard the much anathemetised Stamp Act as to some extent a blessing in disguise. If it can be satisfactorily demonstrated there are difficulties in practice which might be obviated by certain concessions, I have every reason to believe judicious representation would receive careful consideration.

NOTE ON EXTRACT OF LIQUORICE.*

BY D. B. DOTT, F.I.C., F.R.S.E.

In Attfield's 'Chemistry' (13th edition) are these words, "Glycyrrhizin is only slightly soluble in cold water, hence is almost wholly excluded from the official evaporated infusion (Extractum Glycyrrhizæ, B.P., or Extractum Glycyrrhizæ Liquidum, B.P.), but is present in considerable quantity in the evaporated decoction." Coming from such an authority it is not surprising that the statement should be very generally accepted. As, however, the former assertion did not appear probable, it was considered desirable to look into the matter. Some of the published statements are of no value for our purpose, as they do not state that the root was extracted exactly by the official process, or else indicate that hot water had been used. As you know, the Pharmacopœia directs the extract to be prepared by maceration with a limited amount of cold water, and by pressure. In practice it is probably always prepared by percolation with cold water till nearly exhausted, as was recommended by Mr. Boa. Not only has the process of preparation to be taken into account, but also the method of estimating the glycyrrhizin, as the percentage varies considerably according to the purity of the product.

There is also a certain amount of indefiniteness as to what the expression "Glycyrrhizin" really means. The older books, like Cooley's 'Cyclopædia,' explain it as an uncrystallisable variety of sugar obtained from liquorice root. Sohn's 'Dictionary' describes it as the acid ammonium compound of glycyrrhizic acid, and gives the formula $C_{44}H_{63}NO_{18}$. Watts' 'Dictionary' gives the same formula for glycyrrhizic acid. White and Humphrey, in 'Pharmacopedia,' state that the root "contains about 7 per cent. or more of glycyrrhizin, which appears to be a compound of glycyrrhizic acid with ammonia." The molecular weight of the acid is so large that it does not make a very great difference in percentage, whether considered as such, or as acid ammonium salt. We may take it that all the published percentages referred to glycyrrhizic acid in a state of greater or less purity, as precipitation by acid—in some cases repeated precipitation—always forms part of the process by which the principle was obtained from the extract. Sestini gives the proportion of glycyrrhizin in the root as 6·37 per cent., which agrees nearly with that stated by White and Humphrey.

Fifty grains of powdered liquorice root was macerated with cold water and percolated with the same solvent during several days, till apparently quite extracted. The glycyrrhizic acid was then estimated by a slight modification of Hafner's method ('Year-Book,' 1900). It does not seem desirable to digest a glucoside with dilute sulphuric acid in the heat, otherwise the process is Hafner's. The weak waters were concentrated to a small bulk and mixed with excess of dilute sulphuric acid. The precipitate was treated with warm alcohol and the insoluble matter washed with same. The filtrate, rendered alkaline with ammonia diluted with water, was evaporated, made up to 100 C.c. with water and a little ammonia, again filtered and dilute sulphuric acid added. The precipitate so obtained was collected, washed with 3 per cent. sulphuric acid, and dried in a desiccator. It was then extracted with acetone, to which solution was added water and excess of barium carbonate. When the acetone was evaporated the residue was digested with 200 C.c. of hot water, the filtered solution evaporated, and the residue dried at 100° and weighed. The barium compound was reckoned as containing 81·24 per cent. of glycyrrhizic acid. The barium salt weighed 4·30 Gm. = 3·49 glycyrrhizic acid = 6·98 per cent. in the root.

Twenty grammes of the same powdered root was then extracted by water, following exactly the official process, and the glycyrrhizic acid estimated as above. The barium compound weighed 0·96 Gm. = 0·779 glycyrrhizic acid = 3·89 per cent. This would indicate about 15 per cent. of glycyrrhizin in the B.P. extract, if none were rejected by subsequent filtration; while by rational modifications usually adopted the percentage of glycyrrhizin must be still greater. So far from glycyrrhizin being almost wholly excluded from the official extracts, it might, perhaps, be desirable to have a minimum standard of glycyrrhizic acid, whith the respective extracts ought to retain.

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* Communicated to the Pharmaceutical Society of Great Britain, at a meeting held in Edinburgh, on Wednesday, March 19, 1902.

LETTERS TO THE EDITOR.

The Late W. B. Randall—An Appreciation.

A link with the past has just been severed by the death of Mr. W. B. Randall, of Southampton. He was one of my oldest and most esteemed friends, and for his memory I shall always cherish happy thoughts. Mr. Randall inherited from his father a well-established pharmacy, one of those historic provincial houses commanding the confidence of the public and the medical profession; anything and everything that bore the name of Randall could be relied on as being what it professed to be. To this inheritance my friend succeeded, bringing to it a reputation for culture, probity, and honour which not merely maintained, but developed the tradition of the business. Mr. Randall was a man of rare mental and moral endowments, possessing a well-trained mind, richly stored by wide, extensive reading, and kept well abreast of recent discovery. What chiefly impressed me was his sound common-sense judgment of men and things; calm, quiet, reticent, and self-controlled, he brought to bear on life generally, both in his own business and in municipal affairs, a clear, strong, unbiassed estimate. In my assistant days it was the ambition of young men to enter Randall's pharmacy for the sake of the experience to be there gained, second only to that of the great London houses. It counted for something in after days to be able to use that name as a guarantee of sound training. It is to be regretted that Mr. Randall was not more prominently associated with the work of our Society at Bloomsbury Square. His claim to represent pharmacy on the Council was undeniable, and the chemists not only of Southampton, but of the South-West of England, would have been proud to have had him as their representative [Mr. Randall was at one time on the Council of the Society.—Ed. *P.J.*]. Mr. Randall had a worthy conception of the importance of life in its widest and deepest phases; associating himself with every wise progressive movement for the good of his native town, he has left a permanent mark on the educational movements of the time, not only as a member of the Southampton School Board, but also in the higher departments of this great question. This is not the place to speak of his activity in the Christian Church, but I will venture to say this much, that I have known few men who have spent so much of their time, talent, and substance in doing good as my friend who has gone to his reward.

March 18, 1902. "S. R. A." (120/13).

The Ammonium Molybdate Test for Hypophosphites.

In reply to Mr. Millard, what I intended to point out in my "Analytical Notes" was the fact that the aqueous solution of ammonium molybdate of the B.P. is uncertain in testing for hypophosphites, but that the nitric solution of ammonium molybdate, with the addition of sulphurous acid, as described by Mr. Millard, is satisfactory. It is the aqueous ammonium molybdate solution which gives a faint blue colour with sulphurous acid. The nitric solution of ammonium molybdate, however, does not develop a blue colour with this reagent. My own experiments showed the value of the tests as suggested by Mr. Millard, and I regret that it should have appeared otherwise. The thirteenth edition of Attfield's 'Chemistry' 1889) was used; Mr. Millard's original paper was published in the same year. I propose to publish an account of my experiments showing the relative values of the acid and aqueous solutions of ammonium molybdate and of the modification suggested by Dr. Dobbin.

London, March 19, 1902. F. A. Upsher Smith.

Genuine Jaborandi Leaves.

It may interest some readers of the *P.J.* to know that the genuine leaves of *Pilocarpus jaborandi*, the kind official in the B.P., are now, after some years, obtainable in quantity. For a long time the genuine leaves have only been purchaseable in very small quantities and almost as a favour from the few firms who had a little stock closely kept for their own use. The article that has usually been supplied, and even that has considerably increased in price during the last few years, has been the leaflets of *Pilocarpus pennatifolius*, which contain only about half as much pilocarpine as the genuine. The cause of the prevalent scarcity of the leaves of *Pilocarpus jaborandi* is very simple. The price declined to less than it cost to send them to this country, and the exporters did not choose to incur a loss. Some years ago, when the price obtained allowed a fair margin of profit to the exporter, two other varieties of jaborandi were sent over to this country in considerable quantity, viz., the leaflets of *P. pennatifolius* and *P. microphyllus*, and were offered at a lower price than the genuine. Manufacturers of pilocarpine supplied themselves with these, since pilocarpine could be profitably extracted from them, and apparently wholesale druggists were not sufficiently familiar with the chemical and physical differences between the leaflets of *P. jaborandi* and *P. pennatifolius*, and purchased the latter, owing to its being cheaper in price. Consequently the genuine leaflets, to save warehousing charges, had to be sold by the drug brokers at a price that caused a loss to the exporter. It may be here mentioned that genuine leaves purchased on the drug market at less than 1s. a lb. will in future probably mean a stoppage of supplies, as on the previous occasion. As I have frequently received inquiries where the genuine leaves may be obtained, I may state that the specimen recently presented to the Museum as a sample of a large parcel, was presented by Messrs. Wright, Layman, Umney, of Southwark Street, London, and purchased in Hamburg. At present the drug is dear, the wholesale price I am told being 3s. 6d. a lb., as against 2s. 6d. a lb. for the leaflets of *P. pennatifolius*. From the point of view of pharmacopedy the present importation is of special interest, since it is identical in character with the first importation into this country, which contained, as this one does, some leaves and twigs which were distinctly hairy, especially on the under surface, like those of *P. trachylophus*, but these leaves differ from the latter, which has usually only one or two pair of leaflets, in having three or four pair of leaflets, which also are larger and longer, and scarcely recurved at the margin, and have not the dark green colour on the upper surface characteristic of those of *P. trachylophus*.

London, March 15, 1902. E. M. Holmes.

The Apprentice Question.

My opinions on the question "Antique" asks in the *P. J.* of March 8 were very definitely stated when I gave my paper on the apprenticeship question at North Shields. They are, in brief, that any person in business has a right to open and close his shop when he likes, but has no right whatever to overwork his apprentices or assistants. In my own case I allow for overtime, and I would refer "Antique" to any who are or have been in my employ as to whether they are satisfied or not. "Antique" makes the statement that branch shops are opened in obscure and ridiculous positions. To my mind, so long as a branch shop is managed by a qualified chemist, and pays its proprietor, its position is not a ridiculous one; at any rate, no more so than either "Antique's" shop or my own. He also points out that vulgar advertisements have something to answer for. In this point I agree with him. Vulgar advertisements do no good to anyone, but a smart and up-to-date advertisement brings considerable increase to business. It is, however, quite possible that what "Antique" considers vulgar advertising may not be thought so by others. In conclusion, I ask "Antique" to be bold enough to give his name, and not to hide himself under a *nom de plume*.

Heaton, March 12, 1902. Barry Noble.

The Apprentice Question and Protection of Titles.

Although not agreeing with "A Provincial Chemist and Druggist" in his contention that masters as a whole are not to blame for the shortage of apprentices, and that the real cause is the non-protection of titles, I readily admit the great importance of having this question authoritatively settled, even though a decision in favour of restricting the titles to qualified persons individually might place some *bonâ-fide* qualified companies in an awkward position. The titles are the result of an examination, a company cannot be examined, therefore they cannot legally use the titles; such is your correspondent's argument and logically it is unanswerable, but then logic and common sense are "cold shouldered" occasionally in our law courts, and an adverse decision need not create any surprise. All the same, a few hundreds would be well spent in trying to obtain a favourable decision. The Council election is drawing near; let us put a little pressure on the candidates.

Edinburgh, March 17, 1902. W. Lyon.

Unguentum Zinci Oleatis.

Mr. Merson may rest assured his paper on this subject was not overlooked. Whilst readily admitting the likelihood of his process giving quite as nice an ointment, I demur to it being considered as "expeditious" as removing the moisture by pressure, the latter method occupying but a few minutes. Let it be understood that I am not referring to the production of zinc oleate in wholesale quantities, or for sale as a powder, but to the preparation of the official ointment in retail quantities. In the case of the ointment a trace of moisture is of no importance. A snow-white oleate can be prepared with the aid of a drying room, but this method occupies considerable time; moreover, few retail pharmacies possess such an appendage. In a modified degree this remark likewise applies to air ovens. Pharmacists ought to be encouraged to make their own galenicals, too little in that way being done nowadays, and therefore such things as drying rooms, etc., should never appear in the text of the Pharmacopœia unless absolutely essential to the success of a process.

Edinburgh, March 17, 1902. W. Lyon.

A Member's Views.

As I am about renewing my subscription to the Pharmaceutical Society, I ask leave to make use for the first time of the correspondence columns of the Journal. I have been a reader of the Journal and other trade circulations since first entering the business about ten years ago, and have always taken great interest in watching the various discussions that have appeared in their pages relative to our calling as chemists and druggists. As the result of these discussions we have had several attempts made to better the standing of the craft in the eyes of both public and Parliament. The draft Bills, bye-laws, etc., etc., are what I refer to, and need not be collated here. What I wish to point out is that, no matter with whatever kind of measure our councillors or representatives approach Parliament, they are almost always met with the words, "You do not represent the trade." Now, it is imperative, to my mind, that every chemist and druggist on the Register should be also on the Society's Register. There was one little word in Mr. Waddington's letter in the issue of March 8 which, if its full meaning were brought right home to the mind of every chemist in the country, would soon have the desired effect, and that word is "our." If every chemist could be brought to see that the Pharmaceutical Society is really his Society, and that, if he wishes, he can have as much to say as to how things shall be carried on in "our" Society as any member at present has (even including our councillors, for no one of them can have his own way), then we should not be far from getting all chemists on our Register. My real object, therefore, in writing thus is to suggest that our Council should frame, or cause to be framed, a circular letter setting forth, in suitable language, the very great disadvantages under which chemists and druggists labour in not being united into one body; as well as the advantages and privileges accruing to members of our Society, such as the power to vote as to who shall represent us on the Council, the power to nominate a councillor if one so wishes to do; the use of the Library, etc., etc.; a copy of such a letter should be sent to every chemist and druggist whose name appears on the Register of Chemists and Druggists, with a request that he will, if not already a member of the Society, become one as early as possible. I am positive that every member of our Council earnestly desires the above object, and I respectfully submit the above suggestion, in the belief that a direct appeal from the Council would have better results than any other appeal whatever.

Ashton-under-Lyne, March 17, 1902. A. Marsland.

Sodium and Zinc Bromides in Mixture.

It is interesting to point out, in reference to the mixture containing zinc and sodium bromides, that the precipitate is just as copious when the sodium bromide is omitted. The precipitate appears to be an insoluble compound of oxide and bromide of zinc, resulting from a partial decomposition of the latter salt in the process of manufacture, and is analogous to the insoluble basic portion of zinc chloride. The remedy suggested last week completes the analogy.

London, March 17, 1902. F. W. Gamble.

With reference to the mixture containing zinc bromide, sodii brom., phenazone, etc., which your correspondent asserts throws down a precipitate, I have tried the same, and find the doctor was quite right in stating that it ought not to precipitate. The method I used was as follows:—Dissolve the zinc bromide in the smallest quantity of distilled water, add the syr. aurant., and shake well together. Next make a solution of the other ingredients in a measure, and gradually pour into the bottle in quantities of about 2 drachms at a time, shaking gently after each addition. This secures a permanently clear solution without the slightest precipitation. I tried another method by adding the syr. aurant. last, and although I did not get the copious precipitate mentioned by your correspondent, minute crystals, however, began to deposit after a few minutes, and continued to do so until there was quite a thick deposit. I think your correspondent's chemicals could not have been quite as they should be.

March 18, 1902. "A. W. N." (126/16).

Fat in Milk—A Correction.

An obvious error occurs in the report of my "Note on the Determination of Fat in Milk," in your issue of to-day, an error for which I am responsible, and which I shall be glad if you will correct next week. For "100 C.c. of milk" read "10 C.c."

Birmingham, March 15, 1902. Geo. E. Perry.

Another Correction.

In the report of the Newcastle Young Chemists' Association meeting of March 5, printed in last week's *P.J.*, at page 228, there is a slight misrepresentation of one of Mr. Dudderidge's statements. Beginning at line 12 from the bottom, the report should read "his experience as a teacher led to the opinion that (in some instances) general untidiness was as much responsible for failure," etc. The words in parentheses were omitted last week, the omission being mine, and I shall be obliged if this explanation is inserted in the next issue of the Journal.

Newcastle-on-Tyne, March 17, 1902. John F. Usher.
Hon. Sec., Y.C.A.

Sulphur and Turpentine in Pills.

I have been experimenting with the pills about which "Radix" was inquiring in the Journal of March 8, having the formula

Sulphur	gr. iii.
Ol. tereb.	miii.

I now send two results. In the first I used one grain of beeswax and one grain of powdered liquorice, to mass, and in the other I used two grains of beeswax only. In both instances a good pill is yielded, with the minimum of trouble. I think the first formula is the better, as it would probably be more soluble, containing as it does less beeswax. The process I adopted was as follows:—I melted the wax, and when nearly cold, mixed with the ol. tereb., and quickly poured on to the sulphur in a mortar, and massed *sec. art.* The pills made by this method are, I think, more soluble than those made by "Radix's" process and also contain the full dose of turpentine prescribed, while the heating in his case could not fail to drive off some of it. They are also harder and firmer than when made by the method adopted by "A. W. N." Wax as an adjunct to pills is not popular among pharmacists on account of it making, in many instances, an almost insoluble pill. But in this case the melting point of the beeswax will be so lowered by the addition of, in one case three times, and in the other one and a-half times, its bulk of turpentine that this objection will hardly avail. I may mention I used the yellow beeswax, since it has a slightly lower melting point than the white variety.

Harrogate, March 17, 1902. Arthur D. Watson, M.P.S.

* The specimens sent are larger than the pill submitted by "A. W. N." last week.—[Ed. *P. J.*]

The Use of Distilled Water.

May I give my experience on the useful commodity aqua destillata obtained from the wholesaler. It is all very well to put one's "trust in a respectable drug house" in this and all other matters. The article is no doubt good, but it is frequently put into vessels that the light cannot penetrate by any known natural means, and therefore the eye is useless for the purpose of detecting impurity. The nose test is not always applied, and consequently, when I was so rash as to put my confidence in princes (of pharmacy), I was sadly and sorely disappointed, even to the degree of purchasing a good copper still and condenser complete, at a cost of 60s., although a relatively poor man. One glaring instance of my trouble comes to my mind, and there springs up a "creepy" feeling even now, and it occurred a few years ago. The stone jar had previously had in it syrupus ferri iodidi, and had not been well washed; consequently, when some of the water was used for a litre of Fehling's solution for the purposes of urine analysis, everybody whose urine was tested seemed to be suffering from acute diabetes mellitus, and as each person seemed to be very happy with their complaint, including the writer, suspicion fell upon the contents of the stone jar, with the result that the cause was discovered and communicated to the wholesaler, who kindly repaired the pecuniary loss, and sent some fresh, but, at my request, in stoppered Winchester bottles of light coloured glass.

March 12, 1902. "Hackwa" (125/18).

Artificial Buttermilk.

Would any reader of this Journal oblige me by giving the formula how to make artificial buttermilk?

Edinburgh, March 17, 1902. "Inquirer" (70/15).

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply.

Bacilli (R. B. F.—71/28).—Your informant is wrong.

Shaving Block (C. R.—71/20).—See reply to "J. W. T. M." in *P. J.* of March 8 last.

Tobacco Craving (T. C.—71/27).—The physician who has the case in hand ought to be asked to advise in the matter.

South Africa (G. I. R.—71/21).—The only plan we can suggest is to advertise for what you require.

Notice to Leave (A. E. M.—71/17).—The month's notice expires thirty days after it is given, and you are entitled to be paid for the whole time you stay.

Tea Stain (G. A. B.—71/18).—Moisten the spot carefully with weak solution of chlorinated lime, then rinse in warm water, and repeat the operation until the stain is removed.

Metol and Quinol Developer (R. F. W. R.—71/31).—You will find what you require in the photographic formulæ published in this week's Photographic and Optical Supplement to the *P.J.*

Stamp Duty (T. E. P.—71/25).—We have no special information regarding the preparations you mention, but, presumably, the makers know whether or not they are exempt from duty.

Purchase of Stock (H. B. M.—71/19).—The most reasonable view of the case appears to be that B should pay for the goods, since they did not constitute part of the stock when he took possession of the business.

Compressed Ammonia Gas (B. P. H.—71/22).—Write to the Standard Ammonia Co., Old Ford, London, E., or the Standard Anhydrous Ammonia Co., of Great Britain, 85, Gracechurch Street, London, E.C.

Oil of Aniseed (F. R. B.—71/29).—The probable reason is that on the occasions to which you refer the oil employed was that of the star anise, which is less soluble than the oil obtained from ordinary anise fruit.

Hair Powder (C. C. L.—71/26).—Finely powdered starch, with or without the addition of a little powdered French chalk. Potato starch, perfumed as desired, will probably serve your purpose as well as anything. We have no idea of the quantity necessary; that must vary in different cases.

Powder (H. B.—71/30).—The second and third lines of printed matter on the envelope appear to render the powder liable to duty. You should submit specimens, in duplicate, of all the printed matter relating to the powders to the Commissioners of Inland Revenue, Somerset House, London, W.C.

To Make Dried Skins Supple (B. S.—70/6).—A solution of tannin in glycerin (10 per cent.) is an excellent preparation for the purpose. Lanolin well worked into the skin is also useful, and preferable to the glycerin preparation, as it does not become clammy in damp weather. If the glycerin and tannin is used, it should be applied sparingly; both applications must be thoroughly "worked" into the skin.

Lotion (G. E. and S.—71/24).—It appears to be Vlemminck's solution, Liquor Calcis Sulphuratæ, which is prepared by mixing freshly-slaked lime, 16½ parts, with sublimed sulphur, 25 parts, and adding the mixture gradually to about a gallon of boiling water, after which the whole is boiled until reduced to 100 parts by weight, then strained, allowed to settle, decanted, and kept in well-filled bottles.

Liquor Papain et Iridin (J. J. M.—71/23).—(1) Mix papain, 16 gr., with glycerin, 4 fl. dr., and distilled water, 4 fl. dr.; then apply a gentle heat on a water-bath and stir till solution is effected. (2) Mix iridin, 16 gr., with potassium carbonate, 12 gr., and distilled water, 4 fl. dr. Warm until dissolved, mix the solution with the papain solution, then add rectified spirit, 4 fl. dr., and distilled water (if necessary) *q. s.* to make the product measure 2 fluid ounces. Dose, 1 fluid drachm.

Sensitised Textile Fabrics (G. H. H.—70/7).—Such fabrics are supplied to order by the Platinotype Company, for printing d'oyleys, etc. The following silver process is given in Wall's 'Dictionary of Photography':—Dissolve tannin, 60 grains, in distilled water, 3½ fl. ounces. Then dissolve arrowroot, 60 grains, in distilled water, 3½ fl. ounces, by the aid of a gentle heat, and add sodium chloride, 60 grains, and acetic acid, 4 fl. drachms. Mix the two solutions, filter, immerse the fabric, which should be first washed to free it from dressing, in this solution for three minutes, and hang up to dry. When thoroughly dry sensitise on a bath of silver nitrate, 100 grains; distilled water, 2 fl. ounces; nitric acid, 1 minim. Dry, print, and wash as usual, and tone in a sulphocyanide bath. The hard edges can be disposed of by vignetting; and portions of a subject selected from a negative on a larger plate than that required for the picture can be readily dealt with in this way; or fancy border masks, with the corresponding discs, of various shapes and designs, can be obtained through most photographic dealers, and would, we should think, be very applicable to the purpose. A novel process, which is especially suited for the production of photographs on fabrics, is that known as the Primuline or Diazotype process. By this method a positive is produced from a positive; hence the vignetting or masking out can be effected in the production of the positive from which to print. We have had no practical experience of this, but believe the necessary materials and details of manipulation can be obtained from Messrs. Watson and Sons, 313, Holborn.

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LONDON: SATURDAY, MARCH 22, 1902.

CHEMISTS AND SIDE-LINES.

Comparatively few registered chemists in Great Britain can depend upon pure pharmacy as a means of livelihood, and the result is that all, or nearly all, resort to the introduction of what it is nowadays customary to term side-lines. How numerous and varied those side-lines are it is needless for us to say, and, regarding the matter from a strictly professional point of view, it is a pity that the subject cannot be ignored altogether. Inasmuch, however, as it is wiser to face difficulties than to shirk them, it seems better on the whole to recognise that pharmacy, pure and simple, cannot maintain in decency, let alone comfort, more than a fractional proportion of those who have cast their bread upon its waters. The necessity of side-lines must, therefore, be acknowledged as a matter of course, and the only question which remains for consideration is in what direction the registered chemist and druggist should direct his energies so as to produce the best result. The answer to that question must depend upon the circumstances of the particular case. In addition to fulfilling their normal function of compounders and dispensers of medicine, all chemists and druggists, practising as such, act as retail distributors of drugs, chemicals, and galenical preparations. Further, toilet articles, dietetic preparations, sanitary appliances, and the host of miscellaneous articles known as sundries are more or less generally sold by the modern disciples of Galen, whose pharmacies thus approximate in character to miniature variety stores.

A closer relationship to legitimate pharmaceutical practice may be claimed for the wholesale trade in drugs, etc., while the business in proprietary articles is unfortunately so intimately connected with pharmacy proper that it is extremely difficult to dissociate them. That such a difficulty should exist in the popular mind is not to be wondered at, but it is pitiful to realise the depths to which pharmacy has been degraded when so many who have been trained to practise that art are found in the ranks of the worshippers of proprietaries. True, there is nothing which pays much better than a successful proprietary article, but that does not afford sufficient reason for the trade in proprietary articles being permitted to usurp the position which it too commonly occupies in British pharmacies. The development of that particular trade has caused the chemist's position to bristle with difficulties, as Mr. Leo. Atkinson clearly shows in the paper read by him (see p. 237) before the Western Chemists' Association (of London) on Wednesday last. The report (see page 247) of the discussion which followed the reading of that paper also shows how imperfectly the average chemist is acquainted with the actual requirements of the law in regard to the liability of medicinal preparations. Apart from that, however, the undue prominence given to the trade in so-called "patent medicines" has been the chief source of the troubles under which chemists and druggists are now labouring; the unreasoning anxiety to reap large profits from the distribution of such preparations has resulted in a loss of that proper sense of proportion which ought to characterise all individuals occupying, or seeking to occupy, a professional position. In fact, it is possible to accumulate pecuniary profits at too great a cost, as chemists and druggists who aspire to professional recognition have yet to learn in a vast number of cases.

Meanwhile, the problem which faces the chemist and druggist of to-day is how to make ends meet, in view of the fact that professional practice alone fails as a rule to serve his needs. The temptation that besets him is to drift into the ranks of the mere traders, but it is surely possible for him to resist temptation, even though he may be compelled to handle articles which the mere trader can also supply. The key to the situation appears to be that the chemist and druggist should place himself in a position to supply such articles in a more satisfactory manner than the mere trader. If he sells a photographic camera, a microscope, or a pair of spectacles, he should do so with the same sense of individual responsibility that attaches itself to his sales of medicines and poisons. He should know all that it is possible to know about everything for which he acts as agent, and so be in a position to advise and recommend, where such a course is not inconsistent with his position as a professional man. To put the matter briefly, the chemist and druggist should fit himself to serve the public, as a trader, better than any other trader, not with the object of securing higher prices for his goods, but in order that he may induce the public to repose such confidence in his integrity and judgment that they will deal with him in preference to a trader whose only object is to effect large sales and secure quick returns. To that end the chemist and druggist should neither attempt to sacrifice his professional status, nor appeal to his position as an examined man, whose training has involved considerable expense. What he ought to do is to apply science in practice, bringing scientific principles to bear in the solution of commercial problems, and so convince the public that he is thoroughly competent to carry out all that he undertakes. Rule of thumb cannot help being vanquished by properly applied science in the long run, and the chemist and druggist is probably in a better position to realise that than most other people if he would only take the trouble to put the matter to the test.

ANNOTATIONS.

DR. THOS. STEVENSON'S REPORT on the examinations held by the Pharmaceutical Society's Board of Examiners for England and Wales (see p. 245), shows that though there was a large falling off in the number of candidates presenting themselves for examination during the year 1901-2, the proportion of passes to failures did not differ materially from that of the preceding year. The practical parts of the qualifying examination continue to account for the great majority of the failures, 41·7 per cent. of the candidates having failed in practical chemistry alone, as against 38·1 per cent. in 1900-1. Weakness in practical pharmacy and dispensing also caused the rejection of a large number of candidates, and it is noteworthy that 67·9 per cent. failed in the practical subjects, taken as a whole, as against 64·8 per cent. in the preceding year. The obvious moral is that the training of candidates in those subjects is still in need of great improvement, and Dr. Stevenson is not slow to point that moral by stating that, until pharmacists agree to require compulsory courses of instruction in chemistry and pharmacy, at least, there will continue to be a large percentage of failures at the qualifying examination. The percentage of rejections during the year just ended was 72·4, as against 71·9 for the preceding year. Fewer candidates have also presented themselves recently for the Major Examination than formely, and the percentage of rejections for 1901-2 was higher than in 1900-1, the figures in this case again showing, as Dr. Stevenson expresses it, that much is left to be desired in pharmaceutical education, and that the excellent teaching now available at several centres is too little made use of. It is not surprising, therefore, to find that the report concludes with another appeal for a compulsory curriculum.

THE EVIDENCE OF MR. W. L. MUIR, of Glasgow, before the Poisons Committee should afford an interesting study when published, more particularly since there is good reason for believing that the record will not correspond very closely with the inspired statements on the subject which have appeared in certain newspapers. It is stated in the *Scotsman* that Mr. Muir, who spoke on behalf of societies which represent 25 per cent. of the medical men in Scotland, urged upon the Committee the desirability of treating medical practitioners who keep open shop for the sale of scheduled poisons in the same way as druggists are dealt with. He is further alleged to have stated that in the case of a medical practitioner whose unqualified assistant is prosecuted for selling poison, the principal is hauled before the Medical Council and, if found guilty of infamous conduct, his professional ruin is the result, whereas, in the case of druggists, the assistants may be prosecuted, but the principals escape. That, of course, is simply the highly-flavoured tale which has been served up many times of late, but it is difficult to see why the Poisons Committee should be asked to oppose the action of the General Medical Council in maintaining the discipline required in the public interest. It is quite beside the question to assert that in a certain district of Glasgow only 6 or 7 per cent. of the medical men do not keep shops for the sale of drugs, and false to assert that a somewhat similar percentage applies to the whole of Scotland. Mr. Muir will also find it difficult to support his alleged contention that it would be a public danger to take the dispensing of poisons out of the hands of medical men and confine it to chemists and druggists, "because in the case of narcotics the druggist would dispense as often as the prescription was presented, whereas the medical man might stop the supply at any time." Finally, it is the height of absurdity to speak of the unfairness of making the Pharmaceutical Society the prosecuting power under the Pharmacy Act. The Society has no interest opposed to that of the public in this matter, and, apart from the fact that the prosecuting power was imposed upon it by the Legislature, the Pharmacy Act has always been administered by the Society with strict impartiality.

AN ANOMALOUS STATE OF THE LAW with regard to the sale of poisons is assumed by the *St. James's Gazette*, which points out that when the High Court decided that any preparation containing a scheduled poison to an appreciable extent is a poison within the meaning of the Pharmacy Act, 1868, it became apparent that a very large number of articles of commerce which had hitherto been sold without restriction were subject to the provisions of that Act. It is also suggested by a writer in the *Law Journal* that the High Court decision, carried to its logical conclusion, would limit the sale of such articles as paint to chemists, and involve compliance with the regulations in Section 17 as to labelling, etc., in the case of scores of more or less poisonous compositions, and the *St. James's Gazette* does not see how the Act can be interpreted—consistently with previous rulings—without a serious interference with trade. What is wanted is said to be an amending Act to deal with the subject as a whole, so as to prevent any undue hampering of commerce, while safeguarding the public, but it is feared that, in the present state of Parliamentary business, much inconvenience will be suffered before that desirable end is attained. Now, whether or not any desirable end can be attained by the passing of an amending Act, it has yet to be proved, as has been stated in these columns on more than one occasion, that any public inconvenience is caused by the existing restrictions on the sale of scheduled poisons. Mr. T. G. Dobbs and his friends are not backward in asserting that such inconvenience does exist, but their assertions require proof, and it is to be doubted whether it can be proved that inconvenience is caused to anyone except persons who wish to sell poisons which the law forbids them to sell. The *Medical Press*, referring to the fact that a petition has been presented to Parliament by Sir Herbert Maxwell in favour of a proposed Bill to protect agriculturists and horticulturists against proceedings under the Pharmacy Acts for the sale of various poisons, remarks that the petition is a trifle premature seeing that such a Bill is still *in posse*, and that in any event "it is to be hoped nothing will be done in the direction of relaxing the law regulating the sale of poisonous substances." The opinion is also expressed that, "if legislation be demanded, it ought to be in the opposite direction."

THE DIPLOMA OF THE SPECTACLE-MAKERS' COMPANY, as the Master of that City company points out, in a letter addressed to the medical journals, in no wise authorises opticians to undertake sight testing. It is granted after an examination which bears on theoretical and applied optics, spectacle-making, frame-fitting, heat and elementary mathematics, and is intended simply to ensure that the holders of the diploma have an intelligent knowledge of their calling. Referring to Sir William Hart Dyke's letter, the *Medical Press* states that it has been urged that sight testing is after all a tolerably simple matter which can be mastered by any intelligent tradesman with a moderate amount of study and experience, but even if this fallacious hypothesis be conceded, the fact remains that in many instances persons with failing vision who apply to the optician for glasses are in reality suffering from some form of disease of the organ of vision or from some constitutional disease with visual manifestations, calling for appropriate treatment. "This occult cause of failing vision would of a certainty escape recognition at the hands of the mere tradesmen whose object in life is to sell as many pairs of spectacles as he can at as high a price as the appearance of the applicant seems to warrant. No amount of experience or casual training will enable the rule-of-thumb man to diagnose these conditions, and in a certain proportion of cases material harm must accrue to the sufferer, who, of course, is as ignorant of the cause of his trouble as the optician to whom he applies." The Spectacle-Makers' Company is quite in accord with those views, and binds the holder of its diploma by certain restrictions, the object of which is to prevent him from going beyond the proper limits of his calling as an optician. Full particulars of the Company's examinations and regulations will be found in the Photographic and Optical Supplement published with this week's Journal.

The Chemists' Exhibition for 1902 will be held in St. James's Hall, Manchester, on June 3 and three following days. This is the eighth exhibition of the series, and the promoters refer to the fact that the result of the first exhibition held in Manchester was a very great success, the attendance of the trade being exceptional, and buyers coming from the North of England, London, the South Coast, Wales, Scotland, and Ireland. Owing to this being Coronation year, the promoters of the exhibition will be in a position to offer even more favourable travelling facilities than usual for trade buyers from all parts of the kingdom. Special excursion trains will be run at a fare and a quarter for the return journey, and rebates are offered to chemists in business, which will enable them to visit Manchester at about one-third of the usual rates. Further information on the subject can be obtained from the Manager, Chemists' Exhibition, 44, Bishopsgate Without, London, E.C.

Poison Literature evidently does not secure a high place in the estimation of the *Pall Mall Gazette* reviewer. Speaking of the second edition of Mr. C. J. S. Thompson's 'Poison Romance and Poison Mysteries,' the critic, after pointing out that the book has no pretence to be more than a "scrappy and incomplete collection of more or less desultory essays," goes on to say that it will "doubtless satisfy the palates of those whose craving for the morbid and mysterious have called it forth from the limbo of things best forgotten." This seems very severe, both upon Mr. Thompson and upon the depraved individuals who read his book; but, perhaps, after all, there may be some good intent underlying the condemnation. It may, in fact, be a subtle suggestion to the author to use his industry in future in catering for a different class of readers!

The Entries for the April Examinations show that there is no diminution in the number of persons who are anxious to secure a qualification under the Pharmacy Acts. The Registrar reports that no fewer than 497 candidates have given notice of intention to face the examiners next month either in London or in Edinburgh, and of that number 453 are seeking the Minor certificate, whilst forty-four aspire to the higher form of qualification granted to pharmaceutical chemists. When one remembers how many times the qualifying certificate has been maligned as conferring no advantages on its holder, and how often the Major has been scorned as an empty honour, it is somewhat singular to find so many students willing to sacrifice time and money to the worship of a supposed played-out fetish, and one is inclined to question the judgment of those who assume the uselessness of a qualification so much sought after. This time last year 422 candidates entered for the Minor and thirty-three for the Major, and these numbers are not materially different from those recorded in the days before the ten-guinea fee was promulgated. The restrictive influence of the new Bye-laws has, therefore, not yet made itself very manifest, and that is not altogether unsatisfactory, inasmuch as it is a sufficiently reliable indication that there is a fairly ample supply of young men who have faith in the future of pharmacy even on the basis of present experience.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

EXAMINATIONS IN LONDON.

Government Visitor's Report for 1901-2.

The following is Dr. Thos. Stevenson's report of the examinations held by the London Board of Examiners of the Pharmaceutical Society of Great Britain during the year ending March 31, 1902:—

To the Lords of the Council,

My Lords,—

I have the honour to report that I attended twelve examinations of the London Board of Examiners of the Pharmaceutical Society of Great Britain held during the months of April, July, and October, 1901, and January, 1902.

Minor or Qualifying Examination.

There was a large falling off in the number of candidates presenting themselves for examination, 1,036 candidates being examined, against 1,357 in the preceding year.

Of these, 286 candidates, or 27·6 per cent., passed, and 750 candidates, or 72·4 per cent. failed.

This proportion does not differ materially from the proportion of passes to failures during the preceding year. The failures of late years have been so numerous that I have paid great attention to each branch of the examination.

I submit the following

Analysis of Failures.

	Candidates who Failed.		Percentage of Failures.
Practical Chemistry alone	313	..	41·7
Practical Chemistry and Practical Pharmacy and Dispensing	96	..	12·8
Practical Pharmacy and Dispensing alone	100	..	13·4
Botany alone (practical and oral)	13	..	1·7
„ and Materia Medica (practical and oral)	1	..	0·1
„ and Chemistry (oral)	1	..	0·1
„ and Reading and Writing Prescriptions	3	..	0·4
Materia Medica alone (practical and oral)	20	..	2·6
„ „ and Chemistry (oral)	4	..	0·5
Chemistry alone (oral)	43	..	5·8
„ (oral), and Reading and Writing Prescriptions	6	..	0·8
„ (oral), and Pharmacy (practical and oral)	1	..	0·1
Reading and Writing Prescriptions alone	35	..	4·7
Reading and Writing Prescriptions and Pharmacy (practical and oral)	1	..	0·1
Pharmacy (practical and oral) alone	16	..	2·1
Failed in obtaining the aggregate number of marks for a pass	97	..	12·9
	750		100·0

These figures show that no less than 509 candidates, or 67·9 per cent., failed in the practical parts of the examination, *i.e.*, in dispensing, pharmacy (the preparation of pharmacopœial articles), the recognition by tests of ordinary salts and the detection of their ordinary adulterants (practical chemistry), and in the standardisation of potent pharmaceutical wares. Incompetence in these matters—which form, or ought to form, part of the daily routine of the chemist's business—is, rightly, not passed over by the examiners. The safety of the public imperatively calls for competence in practical pharmacy and practical chemistry; and candidates ought not to be passed who display gross ignorance in these subjects, however versed they may be in theoretical matters. Until pharmacists themselves agree to require compulsory courses of instruction in at least chemistry and pharmacy, there will continue to be a large percentage of failures at this examination.

Major Examinations.

For this higher examination 80 candidates presented themselves, against 103 in the preceding year. Of these 28 or 35 per cent. passed, and 52 or 65 per cent. failed. The percentage of rejections is higher than in the previous year. The quality of the candidates presenting themselves for this examination is often very unequal, as might be expected when the examination is an optional one, and the number of candidates comparatively few.

Analysis of Failures.

	Candidates who Failed.	Percentage of Failures.
Practical Chemistry alone	29	55·8
„ „ and Botany	2	3·8
„ „ and Chemistry	5	9·7
„ „ „ and Physics	1	1·9
Botany	3	5·8
Materia Medica alone	2	3·8
„ „ and Chemistry and Physics	1	1·9
Chemistry alone	2	3·8
„ and Physics	1	1·9
Physics alone	1	1·9
Failed to obtain the aggregate number of marks for a pass	5	9·7
	52	100·0

The figures show that pharmaceutical education leaves much to be desired, and that the excellent teaching now available at several centres is too little made use of. It is to be hoped that in the near future attendance at recognised teaching centres will be made compulsory.

March 10, 1902. (Signed) Thos. Stevenson.

EVENING MEETING IN EDINBURGH.

The third evening meeting of the session was held in the Society's House, 36, York Place, Edinburgh, on Wednesday, March 19, Mr. **Peter Boa**, Chairman of the Executive, in the chair. The minutes of last meeting were read and approved. Apologies for absence were intimated from Messrs. Doig, Currie, Dunlop, Ewing, Gilmour, Lunan, McEwan, and Glass.

Mr. G. F. **Merson**, F.C.S. communicated some

Laboratory Notes,

which are printed at page 234, dealing with "Collodion of Belladonna, B.P.C." ; "Green Plaster of Belladonna, B.P.C.," and "Extract and Tincture of Indian Hemp."

Mr. D. B. **Dott** said he agreed with much that Mr. Merson said about collodion of belladonna, the only doubtful point being as to the colouring with liquid chlorophyll. That was a somewhat indefinite preparation, and he doubted if some commercial samples contained chlorophyll, and not some artificial colour, probably of the aniline class. It was a pity to use chlorophyll as a colouring agent. It was at best fugacious and liable to change by heat or oxidation. If they must have a colour it would be better to use something more permanent. In regard to Indian hemp, a fault of the Pharmacopœia was that it simply said a 90 per cent. alcohol extract was to be prepared, and gave no definite indication as to what the finished product was to be. The finished product was the important thing. It could be made in various ways, and probably on the Continent benzene, or a mixture of benzene and benzoline, was used as a solvent, and was quite admissible. He thought the brown colour of some extract was due to water. Two methods of avoiding this fault had been published. Smith suggested washing the plant with water and then drying, and Hooper suggested washing the extract with water ; an extract so treated was nearly soluble in spirit.

Mr. **Duncan** said he saw no reason why they should not make an atropine collodion instead of the belladonna collodion. In regard to Indian hemp, his experience did not coincide with Mr. Merson's. He found that the varying solubility of the commercial extracts was due to the temperatures at which they had been prepared. The higher the temperature the greater the proportion of insoluble matter. The same thing was found in the case of resin of podophyllin. If made at 100° F. it was soluble in alcohol, but if heated to the temperature of a water-bath it became insoluble. Temperature had a similar effect in the making of extract of aloes.

Mr. **Merson** said it was due to water in the alcohol. There was still great doubt as to what was the real active principle of Indian hemp, and until that was determined he doubted if it was advisable to alter the official process. He thought if that process was carefully carried out an active preparation would be obtained.

Mr. **McDiarmid** said he had been puzzled for some time to account for the insoluble matter in some commercial extracts of Indian hemp. His experience did not agree with that of Mr. Merson. He had often made 1 lb. quantities of the extract, which was of an olive green colour and practically entirely soluble in 90 per cent. alcohol, but the commercial samples he had encountered contained as much as 25 per cent. insoluble in that menstruum. He felt inclined to think that this was something added to the extract ; possibly some form of chlorophyll, for the bright green of the sample was not natural, and the same remark might be made about the brilliant green extracts of belladonna leaf met with in commerce. He prepared a tincture from one of those extracts, and it had a density of 0·843, and gave a residue of 3·5 per cent. of dry extract. The insoluble portion was still green, and when the residue from 25 grammes was washed with 1,000 C.c. of methylated spirit the filtrate was still green, and the insoluble portion amounted to 9 per cent. This was insoluble in water, but readily soluble in ether. He wanted to know what that residue was.

Mr. **Nesbit** said the omission of the chlorophyll would be an improvement in the case of collodion of belladonna. He would like to ask Mr. Merson if he was quite sure all the alkaloids went into his collodion, as the belladonna alkaloids were not soluble in ether. Had he estimated the alkaloids after filtering out the fatty matter? In regard to Indian hemp preparations his fears had always been that they were too strong. He had never heard of them being inactive.

Mr. **Hill** said he could confirm from personal observation what Mr. Merson said as to the brown and green constituents of the extract as found in the tincture of Indian hemp. Probably Mr. McDiarmid had found another admixture which required to be examined. The alcohol insoluble extracts which he had seen were sent out by firms of the highest repute, and he could hardly imagine that they had been doctored in the way suggested.

The **Chairman** said he apprehended that the object of the B.P.C. collodion of belladonna was to give a preparation of the leaves which was reputed not to cause the irritation of the skin attributed to the use of brown root extract, and not any desire to pander to an uneducated popular demand for something green. One objection to Mr. Duncan's atropine collodion was that the alkaloid would be too readily absorbed. In regard to the colour of the tincture, he did not think it was due to the age of the drug employed, but most probably the harvesting had something to do with it. He always regarded the official process as a roundabout one, and he thought the preparation could quite easily be made direct from the herb

Mr. **Merson** briefly replied.

The next communication was a

Note on Extract of Liquorice,

by D. B. Dott, F.I.C., F.R.S.E. (See page 239.) This was followed by a communication entitled

Is Tincture of Digitalis a Stable Preparation?

by J. Gordon Sharp, M.D. (See page 236.)

Mr. Duncan said among medical practitioners the fresh infusion was generally held to be the most active preparation. In one case a medical practitioner declared that he could at once tell from the results whether his prescription had been dispensed with fresh infusion or with concentrated infusion diluted. He had put him to the test, and found that he correctly detected when the concentrated infusion had been used. Some doctors preferred to have the infusion made with cold water. They were still a good deal in a fog as to the chemistry of digitalis.

Mr. Merson said this was an interesting test for the value of the leaves. The B.P.C. Formulary said the concentrated infusion was eight times the strength of the fresh infusion. He thought that was a very loose and doubtfully accurate statement.

Mr. Hill said there was a point regarding the infusion needing to be cleared up. He thought doctors got from it a special action different from the tincture. His experience was that the tincture was a stable preparation if made from good leaves.

The Chairman said he also found the tincture a satisfactory preparation. Dr. S. W. Balfour constantly prescribed the fresh infusion. He thought it was especially when a diuretic effect was wanted that the infusion was employed, and without some of the other physiological effects which the tincture would produce.

Attention was directed to the additions to the Library and Museum, and, on the motion of the Chairman, votes of thanks were awarded to the authors of papers and the donors of books and specimens.

WESTERN CHEMISTS' ASSOCIATION (OF LONDON).

The usual monthly meeting of this Association was held at the Westbourne Restaurant, Craven Road, Paddington, W., on Wednesday, March 19, the President, Mr. W. F. Gulliver, in the chair. There was a good attendance. The minutes of the previous meeting having been read and confirmed, the Hon. Secretary, Mr. W. J. I. Philp, stated that a letter had been received from Mrs. Martindale, thanking the Association for its vote of condolence and sympathy passed at the last meeting.

Mr. Leo Atkinson then communicated a paper on

The Stamp Act and Its Difficulties.

At the conclusion of the paper, which is printed at page 237, an animated discussion took place on the points raised, Mr. Glyn-Jones being of opinion that it was extremely doubtful whether a verbal recommendation would render a preparation liable, as the section of the Act referring to the matter of recommendation clearly stated that it must be by public announcement or by written label or advertisement.

Mr. MacEwan pointed out that the Act did not define "public announcement" or "written advertisement."

Mr. Atkinson said his point was that the matter had never been clearly defined, and he thought it ought to be.

The President remarked that if there were half a dozen people in the shop when a verbal recommendation was made, it might be held to be a "public announcement."

Mr. J. Hick thought that in regard to unguentum resinol, the wholesaler or manufacturer was responsible, because the Act referred to the "first vendor."

Mr. Atkinson said he put that point to the solicitors at the Board of Inland Revenue, and they told him that unguentum resinol if retailed must be stamped according to the value, and that it was not a matter of quantity. There was, of course, a concession on the part of the authorities to those who dispense it.

Mr. Cracknell said it was a very common occurrence for a physician to order a single proprietary preparation, and if Mr. Atkinson's view was correct, that must be stamped.

Mr. Hick said he only hoped that chemists would be compelled to stamp every such prescription. If that had been done from the beginning physicians would not prescribe proprietary preparations so commonly.

Mr. R. H. Jones asked whether the Stamp Act applied to doctors who supplied, say, Angier's emulsion?

Mr. Atkinson said if the doctor kept an open shop he would be liable, but not if he dispensed it in the ordinary way.

Mr. Glyn-Jones pointed out that the concession in regard to the supplying of preparations for dispensing without a stamp applied to chemists only and not to medical men. During the past few months he had seen over 200 labels in connection with which a penalty had been claimed, and there could be no doubt that most of them were distinctly liable, only about 5 per cent. being doubtful. He thought there ought to be no occasion for the authorities to grant concessions. There were no concessions under the Food and Drugs Acts, and he saw no reason why there should be in regard to the Stamp Act. Of course, the difficulty was that the Act was passed at a time—1812—when the condition of things was very different to what obtains at present, and he did not know that much fault could be found with the manner in which the Board of Inland Revenue enforced the provisions of the Act. What seemed to be required was not concessions, but judicial decisions in the Law Courts. And to that end the Chemists' Defence Association had taken up two cases in connection with the wording on labels, and he hoped that whatever the magisterial decision might be, they would be able to get a High Court decision on those cases. It was all very well to talk about concessions, but no Government department should have the right to make a concession which meant that duty which ought to be paid to the Government was not paid. If that was so, he thought it would not be long before the law was amended. Therefore, he thought it was the duty of the trade, wherever possible, to obtain legal decisions on the various points raised. One of the most important questions was whether B.P. articles could be sold with a recommendation or not. It was highly important that a judicial decision should be obtained on that point, and with that object in view he personally had drawn up a label to which the attention of Somerset House had been directed, and he hoped in due course a decision would be arrived at. In the meantime it was of no use discussing the matter, the only effectual and business-like method being by way of the Law Courts. At the same time, he could not help saying that in his opinion there was no danger in a chemist making a verbal recommendation of any article.

The discussion was continued by Messrs. Harrington, C. B. Allen, R. A. Robinson, R. H. Parker, Campbell, and others, the general opinion being that the present condition of things in regard to the stamping of medicines was not as satisfactory as it might be, and that it was a matter which might very well be considered by the various associations throughout the country with a view to obtaining a consensus of opinion as to the best way of dealing with the matter. But emphasis was laid upon the advisability of the subject being discussed in committee.

On the motion of Mr. A. Cooper, seconded by Mr. R. A. Robinson, a hearty vote of thanks was accorded to Mr. Atkinson. The meeting then terminated.

PHARMACEUTICAL SOCIETY OF IRELAND.

A special meeting of the Council of this Society was held on Wednesday, March 12, at the Society's House, 67, Lower Mount Street, Dublin, the **President**, Mr. George Beggs, in the chair. There were also present the Vice-President, Mr. Bernard, and Messrs. Kelly, Batt, White (Sligo), Smith, Simpson, Brown, and Goldon (Birr).

Letters of Thanks.

After an informal discussion as to the expediency of changing the hour of meeting in order to secure the better attendance of the members a letter was received from Miss Grindley, daughter of the Hon. Treasurer, thanking the Council for the resolution of sympathy which they had passed for her father on the occasion of his severe illness, and stating that Mr. Grindley's recovery is far advanced. A letter was also received from Mrs. William Martindale, expressing her sincere gratitude, and that of the members of her family, for the letter of condolence which the Council had transmitted to her on the occasion of the death of her husband.

Application for Recognition of School.

A letter from Mr. Francis C. Forth, Principal of the Municipal Technical Institute, Belfast, asking the Council to extend the recognition which they had already granted to the Institute's School of Chemistry to its instruction in materia medica for druggists, and in botany, materia medica, and pharmacy for pharmaceutical students, which, it was stated, were in the hands of thoroughly competent teachers.

On the motion of the **Vice-President**, it was decided to hold over the consideration of this application until some of the northern members of the Council should be present; and the Registrar was directed to write to Messrs. Moffat and Tate apprising them of this decision.

The Dispensing of Poisons.

The following circular was approved of and ordered to be issued:—

> The Council of the Pharmaceutical Society, being responsible for the proper carrying out of the Pharmacy Acts and the safeguarding of the public in the dispensing of medicines in this country, beg to draw the attention of the Boards of all hospitals to the importance of having all compounding and dispensing of medicines carried on by duly qualified pharmaceutical chemists or licentiates of the Apothecaries' Hall. The Council regret to know that the practice exists in many hospitals of having medicines compounded by students, nurses, or other unqualified persons and that regrettable accidents have been the result. The Council also point out the extreme danger which attends the practice of supplying poisonous liniments and other medicines for external use containing virulent poisons, in whiskey, porter, mineral water and other beverage bottles, by hospitals or public dispensaries; and as such a practice is dangerous to the public health, the Council trust that steps may be taken to arrange for the use of special poison bottles.

Service on Juries.

A letter from Messrs. Casey and Clay, solicitors to the Council, stated that qualified sellers of poisons, chemists and druggists, and registered druggists, cannot claim exemption from service on juries until the existing law was altered by Act of Parliament. Should any amendment of the Jurors Acts come to be dealt with by Parliament, that would be the time to seek for the exemptions in question.

Elections.

On the motion of the **Vice-President**, seconded by the **President**, Dr. R. Watt, M.P.S.I., was re-elected Examiner for the Registered Druggist examinations in Dublin and Belfast.

The following were elected members of the Society:—Mr. R. E. Levis (Kiloh and Co., Limited), Cork; Mr. J. Glendenning, Londonderry; and Mr. R. Andrew, Belfast.

CHEMISTS' ASSISTANTS' ASSOCIATION.

On Thursday, March 13, the usual weekly meeting of this Association was held at 73, Newman Street, London, W., the **President**, Mr. J. Wicliffe Peck, in the chair.

The minutes of the previous meeting having been read and confirmed, the **Hon. Secretary**, Mr. S. C. G. Tweedy, said he regretted to have to announce that Dr. Shrubsall, who was to have read a paper on "The Prehistoric in Pharmacy and Materia Medica," had been ordered a sea voyage, and was then on his way to Tasmania. He sincerely hoped that the trip would restore Dr. Shrubsall to sound health, and that next session he would be able and willing to entertain the Association with a few "Prehistoric Peeps." Finding that Dr. Shrubsall's paper would not be available, he (Mr. Tweedy) had written to his friend Mr. Thomas Ward, of Northwich, a gentleman with vast experience in salt manufacture and knowledge of salt lore, asking if he would be good enough to write a paper on the subject of

Common Salt.

Mr. **Ward**, in reply, had forwarded voluminous notes and a number of specimens; the latter, however, although they had been dispatched to the Association's rooms early that morning, had not been delivered. Sodium chloride—NaCl—or salt, said Mr. Tweedy, is one of the most widely spread minerals in nature, there being few countries in which it may not be found, while it is a constituent of all sea-water, the percentage ranging from 1½ per cent. in the Black Sea to 3 per cent.—the highest—in the Mediterranean. As salt never forms except in saturated solutions, no salt is deposited at the bottom of the ocean. Salt lakes vary in strength from 1 per cent. to 26 per cent., according to the season of the year. During the rainy season the percentage is small, but in the dry season the waters may become saturated and salt deposited. In the great lake region in the vicinity of the Caspian Sea the salt lakes are fed by small tributaries, and have no outlet. Thus, when the rainy season commences, the bed of salt deposited during the dry season is covered with sand and clay brought down by the streams, and is prevented from being redissolved. Hence in the course of many years a thick bed of rock-salt is formed, and, from what is now going on in the Dead Sea and other salt lakes, it is not difficult to understand how the large rock-salt beds found in Cheshire, at Northwich, Winsford, and Lawton, have been formed. At Lawton the bed is 290 feet above, and at Winsford 90 feet below, sea level, accounted for by the gradual elevation or depression of the earth's crust. It is a geological axiom that all rocks, sands, and clays, whatever their position now, were originally deposited in water. Coming to the manufacture of salt, Mr. Tweedy said many people seem to think that the rock-salt is dug out, raised to the surface, and when ground is then ready for consumption; others, that the large blocks of white salt hawked about the streets are simply hewn out of a mass which mother earth has provided. But, of course, that is not so. All salt, other than rock-salt, is made from brine—water specially put down, or natural well and spring water, saturated with salt from the rock-salt bed; the rock-salt obtained by mining is also utilised to make brine. By far the greatest quantity of salt is obtained from Northwich and district, it being calculated that not less than 25,000,000 tons of salt have been made in that district from brine pumped off the upper bed of rock-salt. The method of procedure in the manufacture of salt is as follows:—A shaft is sunk until the brine is reached, when the brine—sp. gr. about 1·200, 26 per cent.—rises 80 or 90 feet in the bore, and is then pumped up and conveyed through iron pipes to the "wich-houses," or salt houses, where it is run into large iron pans—ranging from 30 × 20 feet to 130 × 32 feet—placed over furnaces. As the water evaporates, salt is deposited, and men, clad in boots and trousers only, with long rakes draw the salt to the sloping sides of the pan, from whence it is dug out with peculiar bent and perforated shovels, and placed on hurdles to drain (or it is packed into moulds and drained), and taken to the hot-house, which has a temperature of about 140° F. The salt may then undergo the milling process. The processes employed in making the different varieties of salt are briefly described as follows:—

Patent Butter Salt.—This has the finest grain of any salt manufactured. The pan used is circular and covered over, and the brine is kept boiling. Sets of rakers are kept moving by machinery, so that the salt does not crystallise except in very small grains, which are carried into pockets at the side. The salt is removed from the pan twice every twelve hours.

Fine and Coarse Butter Salt.—These varieties are made in open boiling pans, and the fine butter approaches very nearly the grain of the patent butter, but is only taken out once every twelve hours. The pans used for butter salts are shorter than those used for the coarser salts.

Common Salt.—The salt which is next in coarseness to butter salt is made at various temperatures, from 170° F. to 190° F. It is usual to consider two tons of salt made for each ton of fuel consumed. The salt is taken out of the pan every twenty-four hours, if required fine; but once in two days for the coarser, and once in three days for the special coarse.

Fishery Salt.—This variety is used greatly in fish curing, and is a solid, coarse-grained salt, approaching most nearly to "solar" salt. It is not heated to so high a temperature as the common salt, and is allowed to stay longer in the pan to "grow"—seven to fourteen days.

Bay Salt—of which very little is specially made—is the coarsest manufactured. Before any brine is put into the pans horns are laid all over the bottom of the middle portion, and strings stretched across from side to side, a few inches apart. The brine is then run in and the fires made large enough to nearly boil the brine. As soon as the correct point is reached the fires are raked out and the brine allowed to quickly cool down. In the process of cooling the crystals of salt form in cubes all over the strings and thorns. When the crystals have "set" small fires are put back and kept up for a month or so. The salt is then drawn out and the large crystals picked off.

Handed Squares Stoved, or lump salt, like that carried about by hawkers for sale, is the same quality as fine butter salt. A properly dried square should "ring" when struck sharply.

Factory Filled Stoved Lumps.—In some trades it is necessary to have stoved salt, but squares, or lumps, would be very inconvenient, so, after drying, the "Handed Squares" are taken to a mill, where they are broken and filled into sacks. For the finer qualities sieves are used in conjunction with the mill, and all degrees of fineness up to superfine table salt are produced. The "superfine" is almost of the fineness of flour.

Hopper Salt consists of pyramids of cubes. Salt crystallises in true cubes, with lines of cleavage.

The mother liquor—the salt pan is never allowed to boil empty—contains most of the magnesium chloride, the calcium sulphate being precipitated, forming a scale at the bottom of the pan, which requires "scaling" about once a month. In places where the brine is weak it is taken by pipe to the top of the building, and there allowed to run on to thorns strewn about on a perforated floor, and from that to the pan below. Under favourable circumstances it is considered that thirteen gallons of water is evaporated from each square foot in twenty-four hours. In conclusion, Mr. Tweedy explained that the subsidences which take place in and around Northwich are due to the gradual extraction of the brine from the upper bed of rock-salt, the layer of marl and clay intervening between the upper bed of sand and the salt bed not being sufficiently thick to support the surface, hence it gently "settles" down as the rock salt is dissolved.

An interesting discussion followed the reading of the paper, and Mr. Tweedy was heartily thanked for the information he had conveyed concerning salt.

ROYAL INSTITUTION.

At a meeting held on Friday, March 14, Sir Frederick Bramwell occupied the chair, and Professor Sylvanus Thompson delivered a discourse on

Magnetism in Transitu.

Referring first to the transference of magnetism from a magnet to any other body capable of becoming magnetised, the lecturer said the question arose as to what was the physical nature of the transfer. There was no loss by the transfer, one magnet being capable of communicating its properties to many other magnetisable bodies without undergoing any loss of its original power. Some of the phenomena of magnetism had been inquired into many centuries ago. Lucretius speaks of the properties of a chain of rings. The nature of the transfer is commented on by Gilbert in his book, 'De Magnete,' and he considered that it might be compared to the passage of light, and that there must be some "magnetical" body for it to strike on. It was then explained that there were two processes to be considered in a study of the transference of magnetism. First, the transference through magnetic materials such as a bar of iron; secondly, through non-magnetic media, such as air and other gases, or a vacuum. Dealing, then, with the former, several experiments were performed. Gilbert's experiment with the capped lode-stone was shown. A magnet was taken which was just unable to lift a certain weight, but when another piece of iron was applied to the opposite end it was found that the weight could be readily lifted. The familiar experiment with iron filings showing the lines of force was next projected on the screen. It was further shown that if the filings were fixed in position by means of varnish they acted as magnets. Also a tube containing iron filings and resin, which had been heated until the resin melted, and then allowed to cool, whilst under the influence of a magnet, retained its magnetic properties. The lecturer then said that to Professor Ewing was due the development of the theory that the phenomenon of magnetism was the bringing into line of every particle of the magnetised body. In illustration of this an interesting experiment was shown. A number of tiny charm compasses were arranged in a group, and the influence of the earth's magnetism neutralised by means of a bar of iron. The magnets then pointed in various directions. A small current of electricity was then passed through a coil surrounding the compasses, thus setting up a magnetic influence, and it was seen that several of the magnets pointed in a certain direction. By increasing the current more of the magnets pointed in the same direction, and finally, when some disturbing influence was brought to bear on the group, such as tapping the stand on which they were arranged, the magnets all pointed the same way. Professor Thompson said that, in view of more recent theories, it was probable that there was a circulation within the molecules and that there must be no friction, and that, therefore, it was probable that the ions were in circulation rather than the particles. Transference through non-magnetic media was next dealt with. It was necessary here to fall back on the similarity to light. Experiments were then performed showing that magnetism was produced by the passage of electricity through a coil of wire. If two half-rings of iron were placed together so as to form a link with the coil, and then a current passed, the magnet thus formed was so strong that it was impossible to separate the two halves. Experiments with the electro-magnet were also shown. It was then demonstrated that the magnetic field was capable of being twisted. In order to illustrate this it was shown that when a current of electricity was passed in one direction a current in the opposite direction was induced in a wire running parallel to the first, and that if the wires were now placed within a loop of wire twisted into a figure of eight, so that one wire passed through each loop of the eight, it was found that when a current was passed the current induced in the second wire was in the same direction. By means of the animatograph a diagrammatic representation of the manner in which magnetism is propagated was shown. With a horse-shoe magnet the waves appeared to travel out laterally and then to recede again as the magnetic influence was withdrawn or neutralised. It could thus be seen that it was impossible for these waves to travel a great distance, but that such waves could be produced had been predicted by Maxwell and realised by Hertz. These two kinds were compared to the hurling of a javelin in the Hertz waves and the thrust of a spear in the ordinary magnetic waves. Professor Thompson concluded by saying the propagation of magnetism was always lateral, never end on. It was, moreover, possible that the same might be found to be the case in other instances. Gravity, for instance, might be found to be due to some external cause, which extended its influence in the same way.

PLYMOUTH JUNIOR CHEMISTS' ASSOCIATION

At a meeting of the junior section of the Plymouth, Devonport, Stonehouse and District Chemists' Association, held on Wednesday, March 12, Mr. C. T. Weary, President of the latter Association, occupied the chair, and Mr. E. Ernest Lowe, curator of the Plymouth Municipal Museum, gave a lecture on

Mosquitoes and Malaria.

He first gave a sketch of the structure and life-history of a typical mosquito (*Anopheles maculipennis*) which belongs to the order Diptera, or two-winged insects. The female only of this species bites, and the structure of her biting instrument, or proboscis, was carefully explained, with the aid of lantern slides. The parts of which this is composed were too fine to cause the irritation one felt when bitten by a gnat, but the gnat injected an irritating fluid into the wound, and this was the cause of the pain. The eggs of the insect were laid on the surface of pools of water, and hatched about three days after deposition. The larva fed on minute organisms in the water, turned into the pupa stage in about sixteen or twenty days, and this became a perfect mosquito in about three days more. Our knowledge of malaria first emerged from chaos in the seventeenth century, and in the eighteenth it was observed that the disease was closely connected with the presence of stagnant water. Malaria is due to a minute animal which is parasitic in the red blood corpuscles, and it was transmitted from man to man by the mosquito, which sucks the blood of people suffering from the disease, and then goes and bites others previously free from it, and infects them. The lecturer also showed how to distinguish harmless species (belonging to the genus *Culex*) from dangerous species (of the genus *Anopheles*), both in the larval and adult stages. This was followed by an account of the experiments made to prove the mosquito theory of malaria, the elucidation of which, said the lecturer, is likely to prove of immense benefit to the human race, since, for example, in India alone the total deaths from malaria in 1897 were 5,026,725. The important part taken by the London and Liverpool Schools of Medicine and the officers connected therewith was mentioned, and the lecturer concluded by calling attention to the importance of the biological laboratory side of the work. He hoped in the future greater facilities would be given for original research, and that the knowledge gained would be efficiently acted upon in the region of practical sanitation.

In the discussion which followed, Messrs. C. T. Weary, G. Breeze, W. H. Woods, G. Fairweather, E. J. Groombridge, and E. Lovatt took part, and a vote of thanks was subsequently accorded to the lecturer on the motion of the Chairman.

PHARMACEUTICAL SOCIETY OF CAPE COLONY.

The annual general meeting of this Society was held in Hofmeyr's Chambers, Cape Town, on Thursday, February 20, under the chairmanship of the President, Mr. J. A. Mathew (President of the Colonial Pharmacy Board). There were present Messrs. F. W. C. Thomas and George Darroll (Vice-Presidents of the Society), members of the Colonial Pharmacy Board; Mr. A. H. Mathew (of Messrs. Heynes, Mathew and Co.), Mr. A. J. Rivett (director of Lennon, Ltd.), Messrs. Geo. Hamilton, A. Cameron, J. S. North, W. B. Jeffreys, J. H. Cooper, J. D. Buckle, S. Johnson, A. Heaton, James Dell, H. E. Cope, and the Secretary. The previous minutes having been read and confirmed, and some minor alterations made on proposed Rules 14 and 15,

The following subscriptions to the Benevolent Fund established in connection with the Society were made:—

Messrs. J. A. Mathew, A. J. Rivett, A. H. Mathew, Geo. Darroll, A. Cameron, Geo. Hamilton, F. W. C. Thomas, J. H. Cooper, J. D. Buckle, H. E. Cope, J. S. North, S. Johnson, A. Heaton, E. L. Ralling, and W. A. Sleggs, each one guinea; Mr. J. Dell, half-guinea; while the Society contributed a cheque for £10 (ten pounds). The Secretary, in his report, pointed out that the membership of the Society totalled ninety-six, but he added that all had not paid their subscriptions. The balance at the bank amounted to £43 16s. 11d., which, considering the subscriptions in arrears, showed that the financial status was satisfactory.

Presidential Address.

The President then addressed the members as follows:—At this, our annual meeting of members, an address is expected from the retiring President. A well-known proverb runs, "Brevity is the soul of wit." I shall, therefore, try and lay claim on the occasion to being your "witty" President by being as brief as possible. After listening to our Secretary's report of the past year, it is incumbent upon us to try by all means in our power to induce members to take greater interest in the working of our Society. I would, therefore, throw out the suggestion that a circular be drawn up by the Committee appealing to all the members to manifest a greater zeal in promoting the objects for which we exist, and inviting them to send in written proposals as to what they consider would be the best means for attaining a more healthy state of things. We might in this way get some valuable hints, which would tend to make our meetings more attractive, and promote the welfare of our Society. I have no doubt the unsettled state of things in the Colony has during the past year tended to hamper our efficiency, but with the return of normal conditions our efforts during the coming year will, I am sure, be attended with good results. There is quite sufficient dormant talent in our members to produce both interesting and instructive papers upon subjects connected with our profession, if they can only be assured of an appreciative audience. I trust during the coming year this opinion will be justified. With the broadening vista opening before us of a United South Africa, we may reasonably expect considerable additions to our membership from newcomers to the Land of Hope. Let us be prepared to give them a hearty welcome and a wholesome bill of fare worthy of our name. Trusting your new President may be able to instil into our Society a spirit of earnest zeal and expectation, and thanking you for your kind recognition of my feeble efforts, I conclude by wishing you a happy and prosperous year.

Election of Officers.

The election of officers for the ensuing year then took place:—President, Mr. Geo. Darroll; Vice-Presidents, Mr. F. W. C. Thomas and Mr. A. J. Rivett, with Mr. James Dell as Secretary, while the following gentlemen will act as Council members: Messrs. J. H. Cooper, S. Johnson, W. Fick, A. H. Mathew, J. A. Mathew, Geo. Hamilton, E. L. Ralling, and J. S. North.

The following were then elected members:—Messrs. G. A. Grant, T. Martin, N. Birt, J. Boyd, and W. H. Hopkins.

With a hearty vote of thanks to the Chairman the proceedings then terminated.

NOTES IN PARLIAMENT.

Sampling the Atmosphere.—During the customary adjournment for dinner in the House of Commons on Thursday, March 13, samples of the atmosphere of the House were taken by experts for the purpose of analysis, the object being, as was indicated in these columns a few weeks ago, chiefly to ascertain the condition of the atmosphere of the House in regard to risks of infection of influenza. The operations of the experts, with their cunningly-devised apparatus, were watched with much interest by the members of the press, strangers, and attendants, who were at the time the sole occupants of the chamber.

Duty on Chocolate.—Although foreign chocolate contains a large proportion of sugar, no extra duty has been charged upon it since the imposition of the sugar tax, which has been made applicable to all other classes of confectionery. The Chancellor of the Exchequer has therefore been asked by Sir Samuel Hoare to consider the matter with a view to treating chocolate in the same way as other imported confectionery. In his reply Sir M. Hicks-Beach pointed out that chocolate, which is a mixture of cocoa, sugar, and flavouring matter, has for long been liable to a specific duty, independent of the proportions in which its several constituents may be present; and, since 1853, the rate of that duty has been 2d. per lb. The sugar duty of 4s. 2d. a cwt. on the proportion of sugar in the mixture is held to be merged in the higher specific rate on chocolate; and, if chocolate were treated like other confectionery, it would be admitted at a much lower duty than at present levied, which, Sir Michael suggested, was not what his hon. friend would desire.

Dipping of Sheep.—In view of the periodical outbreaks of sheep scab, the President of the Board of Agriculture has been asked by Mr. Laurence Hardy whether he would consider the expediency of promptly introducing a measure to secure compulsory dipping of sheep at least once a year, either by general legislation or by giving powers to County Councils to order compulsory dipping within their own areas. Mr. Hanbury replied that one dipping a year would not meet the difficulty, as the ova would not be destroyed, and a second dipping very soon afterwards would be necessary to destroy the produce of the ova. The difficulties in the way of enforcing the dipping of some fifty millions of sheep twice a year, with a definite interval between the dippings, were obvious. Local authorities had already such large powers for regulating the movement of sheep into and in their own districts, that they practically could do what the hon. member suggested by making dipping a condition precedent to movement.

The Patent Law.—Having regard to the effect on British industries of the conditions in this country under which foreign manufacturers can introduce patented articles without working, Mr. J. Lawrence, the other day, asked the President of the Board of Trade to say whether he was prepared to take steps, by legislation or otherwise, to compel foreign patentees to work their patents here just as British manufacturers of patented articles are compelled to work their patents in Continental countries. Mr. G. Balfour replied that the proposals of the Government with reference to this subject are contained in the Patent Law Amendment Bill now before the House, but, as he stated when introducing the Bill, he is ready to consider any representations that may be made to him with regard to the details of the measure.

The Vaccination Law.—The President of the Local Government Board has received from 251 urban sanitary authorities in the United Kingdom resolutions in favour of the repeal of Clause 2 of the Vaccination Act of 1898, the clause which relates to the conscientious objector. The Act will expire at the end of 1903, and the question of its renewal will have to be considered next year. Answering Mr. Forster a few days ago, Mr. Long said that in the meantime he does not propose to take steps for the repeal of the section referred to.

The Opium Trade in India.—In response to a request from Mr. J. Gordon, the Secretary of State for India has consented to lay on the table of the House of Commons the petition presented to him in December last by the Anti-Opium Society, his reply thereto, and correspondence relating to the same.

The Budget.—Thursday, April 10, is named as the probable day for the Budget statement of the Chancellor of the Exchequer.

The Government and Cancer Research.—The First Lord of the Treasury was on Tuesday last again questioned on this subject. Mr. Balfour's reply showed that he remains of opinion that research into the cause, cure, and prevention of cancer can best be dealt with by private enterprise rather than by the Government. He was told that the Royal College of Physicians and Surgeons had appointed a joint committee to consider how best an investigation for the possible cure of cancer could be carried on, and he had received communications from the President of the Royal College of Physicians and other quarters which led him to believe that the efforts to organise research would be successful with the scientific staffs which the Colleges had at command and the liberality of the public.

The Butter Standard.—On Monday last Sir E. Strachey asked the President of the Board of Agriculture to say whether, after he had fixed the percentage of water to be permitted in butter, it would still be allowable to sell milk-blended butter containing water above the standard fixed by him. Mr. Hanbury answered that this was both a hypothetical and a legal question, which, looking to the subtlety of legal decisions, he could not answer. All he could now say was that he would draw up the new regulations as strictly as he could with a view to preventing such sale.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

Saltpetre.

At Aston Police Court, on Wednesday, March 12, Adeliza Murby, 59, Lichfield Road, Aston, was summoned for selling saltpetre containing 80 per cent. of sodium nitrate.

Mr. Philip Baker, for the defence, urged that although the defendant had not a written warranty within the meaning of the Act, the firm from whom she bought it had a warranty.

The Bench ruled that this was not a warranty to exonerate the defendant.

The person from whom defendant purchased the saltpetre was then called, and gave evidence that he believed the substance sold to be saltpetre, and that he had forwarded a sample to be analysed. Mr. Baker pointed out that sodium nitrate was described in the text-books as "Chili saltpetre."

The magistrates expressed the opinion that the defendant had acted with honest intentions, but as there had been a technical offence they felt bound to impose a fine of 20s. and costs.

Camphorated Oil.

At Kettering Police Court, on Wednesday, March 5, William Collyer, grocer, of Geddington, was summoned for selling camphorated oil which did not comply with the requirements of the British Pharmacopœia, it being deficient in camphor, and had been prepared with cotton-seed oil instead of olive oil. The inspector who made the purchase said that defendant told him he made the oil himself, and was not aware that it came under the Food and Drugs Acts. The magistrates were of opinion that defendant had acted in ignorance, but he must learn what was his duty in respect to the Food and Drugs Acts. Fined 10s. and costs.

POISONING CASES AND INQUESTS.

Carbolic Acid.—On March 13, a child named William Sime died in the Edinburgh Royal Infirmary from the effects of drinking carbolic acid in mistake for liquorice water.

Laudanum.—An inquest was held at Kensington on March 11 concerning the death of Maria Mathews (63), a widow, residing at Wornington Road, North Kensington. It was stated that deceased had been in the habit of taking laudanum for the relief of a chronic cough. On Friday night, March 7, she purchased a pennyworth of laudanum, and on Saturday morning she was found face downward on the bed with the empty laudanum bottle by her side. The medical evidence was to the effect that death was due to suffocation from falling on her face in bed while suffering from chronic bronchitis and from the effects of laudanum taken to ease the cough. A verdict of death by "misadventure" was returned.

Laudanum.—On Wednesday, March 5, an inquest was held at Swanage respecting the death of Sarah Elizabeth Kitchin (31), of Stamford Hill, London. The evidence was to the effect that deceased went to Swanage on Tuesday on a visit to relatives, and during the day she drank rather freely and purchased laudanum of several chemists. Later in the day she was found dead in her room.—Mr. Randall, chemist, High Street, Swanage, said deceased came to his shop and asked for an ounce of laudanum for injection. She seemed perfectly right, and he asked her how much she was accustomed to use for injection. She replied: "A tablespoonful." He said half a teaspoonful would be sufficient, but as she appeared to know all about it he had no scruples in giving her an ounce.—Mr. Wilkes, chemist, Institute Road, said that deceased asked for an ounce of laudanum, and as she seemed quite sensible he supplied it.—The Coroner said Mr. Randall and Mr. Wilkes were quite within their rights, because opium was in the first part of the schedule. It seemed to him that the law of poison did not as a matter of fact apply at all.—The jury returned a verdict of poisoning by laudanum, exonerating everyone from blame.

Obituary.

Capes.—On March 14, John Henry Cooper Capes, Chemist and Druggist, York. Aged 44.

Mudie.—On March 15, Isaac Mudie, Chemist and Druggist, Leeds. Aged 52.

Randall.—On March 14, William Brodribb Randall, Pharmaceutical Chemist, Southampton. Aged 80. Mr. Randall had been a member of the Pharmaceutical Society since 1845, and for five years—from 1865—he was a member of the Council, while his father, Mr. Edward Mayor Randall, was one of the founders of the Society. Mr. W. B. Randall was the senior partner of the firm of Randall and Son, Southampton, which was founded by his grandfather, William Randall, about the year 1793. In 1837 he entered with his father on an apprenticeship of five years to the Society of Apothecaries, on the completion of which he became a private pupil of the late Mr. Robert Warrington, at the Apothecaries' Hall, attending, at the same time, lectures in chemistry, botany, anatomy and physiology, and in the practice of medicine, at University College, by Professors Graham, Lindley, Sharpey, and Williams. In 1843 he gained Graham's first silver medal for chemistry, and had certificates in all his subjects. On April 18 of the same year he became an Associate of the Chemical Society, his tutor, Mr. Warrington, being its first secretary. Thus Mr. Randall was one of the oldest Fellows of the Society. On returning to Southampton he joined his father in business, and in May, 1845, he received his diploma as a pharmaceutical chemist. While taking a keen interest in all pharmaceutical affairs, particularly in the matter of education, Mr. Randall was also active in other directions, being a member of the Borough Council from 1859 to 1863, and was connected with the Southampton School Board from its commencement in 1871 to 1883, occupying the position of its chairman for eleven years. In many other ways he displayed deep interest in the affairs of Southampton, but in 1883 he was compelled to give up all public work, on the advice of the late Sir Andrew Clark. About the year 1894 Mr. Randall, whose four sons had all taken to other callings, took into partnership Mr. Harry Wilson, F.I.C., F.C.S., pharmaceutical chemist, the business, however, still being continued under the old name of Randall and Son.

THE LATE WILLIAM BRODRIBB RANDALL.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

MYRTICOLORIN. A. G. Perkin has re-examined the properties of myrticolorin, $C_{27}H_{28}O_{16}$, a quercetin glucoside present in *Eucalyptus macrorhyncha*, which, as described by H. G. Smith, differed mainly from osyritrin, in that the sugar derived from it appeared to be galactose. As Smith finds on re-examination that this sugar is dextrose, comparative experiments have been carried out, and the results show that myrticolorin is identical with osyritrin.—*Proc. Chem. Soc.*, **18**, 58.

GROWTH UNDER DIMINISHED AIR-PRESSURE. A series of experiments has been made by Schaible to determine the effect of diminished air-pressure on the growth and germination of plants. The apparatus used is fully described and illustrated and details of numerous experiments are given. The results arrived at were that, as compared with similar plants grown under normal barometric pressure, those under the diminished pressure—in most cases about ½ atmospheric pressure was employed—(1) grow more rapidly; (2) germinate more slowly; and (3) excrete drops of water from their leaf surface.—*Fünfstück's Beitr. f. Wissenschaft Bot.*, **4**, 93.

GLYCERO-ARSENIC ACID. Although glycerin and arsenic acid readily react to form esters with the loss of one or two molecules of water, V. Auger finds that product is immediately hydrolised in the presence of water. It is therefore impossible to prepare glycero-arsenates from aqueous solutions of glycero-arsenic acid. He finds that the calcium salt, prepared by the method of Pagel (*P.J.* [4], **12**, 717), is not true calcium glycero-arsenate, since it contains only a trace of organic matter. The salt may, however, be obtained by heating together *in vacuo* one molecule of calcium acid arsenate, $CaH_4 2(AsO_4)$ with one molecule of glycerin. This salt undergoes complete hydrolysis in the presence of water.—*Comptes rend.*, **134**, 238.

BOLETOL. According to Gabriel Bertrand, the chromogen boletol, to which the developmen tof the blue colour when the tissues of certain *Boleti* are crushed or broken is due, is not a nitrogenised body, as previous investigators have supposed. The author has succeeded in isolating it, in a state of purity, in fine bright red acicular crystals, which are sparingly soluble in cold, but readily dissolved in hot water, from which, however, it does not separate again on cooling. This is supposed to be due to the fact that amorphous boletol is soluble in cold water while the crystalline body is not. In order to prevent the decomposition of boletol by the oxydase in the plant juice, the fungi are cut up in small quantities at a time and at once dropped into boiling alcohol and heated for half-an hour. The alcoholic extract thus obtained is precipitated first with neutral, then with basic lead acetate. The washed lead precipitate is then suspended in 10 per cent. HCl solution, which removes a portion of the boletol, which is then shaken out with ether, the solvent evaporated and the residue redissolved in water and purified by successive crystallisations. The lead precipitate, after treatment with HCl, gives a further quantity of boletol, combined with fatty matter, when extracted with ether. It is found that the addition of a little hydrochloric acid to the mother liquor in the final crystallisations, aids the separation of boletol in a pure condition.—*Comptes rend.*, **134**, 124.

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REACTION FOR LIGNIN. Mäule suggests a new reaction for lignified tissue in stem and other structures. The section is soaked for about five minutes in a 1 per cent. solution of potassium permanganate in distilled water, and then washed with water. The section is then soaked for two to three minutes in dilute hydrochloric acid; after again washing in water a drop of dilute ammonia solution is added to the section, when the lignified tissue becomes coloured a deep red, the non-lignified remaining clear and colourless.—*Fünfstück's Beitr. f. Wissenschaft Bot.*, **4**, 166.

DISODIC METHYL-ARSENATE IN PALUDISM. Armand Gautier has obtained a series of extraordinarily successful results in the treatment of paludism with hypodermic injections of disodic methylarsenate, $AsCH_3O_2Na_2$. Although the salt has relatively low toxic power, it has effected a complete cure in nine cases of African malarial fever, all of which had derived but little benefit from quinine. In two cases a single injection of 5 Cgm. of the salt was sufficient to remove the hæmatozoa from the blood, and to effect a complete cure; two others required two such injections, and the remainder four injections at intervals of one or two days. In one specially obstinate case the dose of the last two injections was increased to 7·5 Cgms. In no case had a relapse occurred at the time of reporting. (See also p. 256.)—*Comptes rend.*, **134**, 329.

CUPRIC HYDRATE AND METALLIC SOLUTIONS. By the action of tetra-cupric hydrate on metallic solutions, H. Mailhe has obtained a series of interesting double salts. By allowing a moderately concentrated solution of cadmium sulphate to remain in contact with tetra-cupric hydrate for several months in the cold, a bluish green powder of hexagonal tablets of the orthorhombic prismatic series was obtained, which had the composition $2CdSO_4 \cdot 3CuO + 12H_2O$. If the mixture be heated on the water bath to 25-30° C., the same salt is formed in a few days. By boiling, a green precipitate of hexagonal tabular crystals is formed in a few minutes. These have the composition $2CdSO_4 \cdot 3CuO + 10H_2O$. With nickel sulphate, under like conditions in the cold or at 30°, the compound $2NiSO_4 \cdot 3CuO + 12H_2O$ was obtained as quadrangular green scales, while on boiling, $2NiSO_4 \cdot 3CuO \cdot 10H_2O$ separated in rhomboid lamellæ. Cobalt gives a double salt containing more copper when prepared at the lower temperature, the maroon precipitate, consisting of quadratic crystals, often grouped in a spherical form, having the constitution $3CoSO_4 \cdot 5CuO \cdot 16H_2O$. On boiling however, the birefringent hexagonal tables formed have the formula $2CoSO_4 \cdot 3CuO + 10H_2O$ analogous to the compounds of cadmium and nickel. With zinc, the composition of the double salts was found to vary with the strength of the solutions employed. When only one-sixth of a molecular weight of the zinc salt was present in the litre, the bluish-green birefringent lamellæ had the composition $ZnSO_4 \cdot 3CuO + 5H_2O$. With from 1 to 3 molecules of zinc sulphate, quadratic prisms of either $2ZnSO_4 \cdot 3CuO + 12H_2O$, or $2CuSO_4 \cdot 3ZnO + 12H_2O$ were obtained. With a concentration of 1 to ¼ of a molecular weight of zinc sulphate, the basic salt $ZnSO_4 \cdot 2CuO \cdot 5H_2O$ or $2ZnSO_4 \cdot 3CuO \cdot 12H_2O$ resulted. With ¼ to ⅙ of a molecular weight, the resulting compound had the formula $ZnSO_4 \cdot 3CuO \cdot 5H_2O$, or a mixture of this with the compound $2ZnSO_4 \cdot 3CuO \cdot 12H_2O$. This last salt is invariably obtained when mixtures of any strength are boiled together.—*Comptes rend* **134**, 42.

MATERIA MEDICA OR PHARMACOPEDY.

BY JOHN HUMPHREY.

A careful search of the standard English dictionaries reveals the somewhat remarkable fact that no single word has yet secured general acceptance as a substitute for the Latin *materia medica*, in the application of that term as the name of a subject—the knowledge of drugs—rather than in its primary meaning of a number of substances used for medicinal purposes. The word "pharmacy" appears at one time to have been employed in the sense indicated, but is now usually understood to mean—

(1) The art of preparing, compounding and dispensing medicines;

(2) A place where medicines are sold by duly qualified persons; and

(3) The profession or occupation of compounding and dispensing medicines.

The terms pharmacognosy, pharmacography, pharmacology and, more recently, pharmaceutics, have similarly come to be used in a specialised and restricted sense. Thus the terms pharmacognosy and pharmacography are properly limited to the knowledge of crude drugs of vegetable or animal origin, and pharmacology treats more particularly of what is known concerning the action of drugs, while pharmaceutics may now mean (1) practical pharmacy, *i.e.*, the art of preparing medicinal substances in a suitable form for administration, or (2) pertaining to pharmacy.

Not one of the foregoing words covers a knowledge of drugs of mineral origin—the chemical *materia medica* as it is termed—and a new term is obviously required, therefore, to distinguish the subject to which the all-inclusive but unsatisfactory name *materia medica* has long been applied, *i.e.*, the knowledge of drugs of vegetable, animal, or mineral origin, and their preparations. Such a term presents itself in "pharmacopedy," a word which may be understood to mean (1) the art of conveying information about drugs and their preparations, or (2) the sum of scientific knowledge concerning the same. Dr. Murray, editor of the 'New English Dictionary' has been good enough to express the opinion that "pharmacopedy" and its derivatives "pharmacopedic" and "pharmacopedics" look as if they would be useful words. Accordingly, in the hope that his opinion may be confirmed by those who may be regarded as specialists in the subject, I am encouraged to publish the following suggested definitions, with quotations showing the words in use:—

Phar′ma-cop′e-dy (Gr. *φαρμακον* and *παῖς*).—1. The art of conveying exact information about drugs of vegetable, animal, or mineral origin, and their preparations.

Ex. "The art of imparting instruction or conveying information about drugs—using that term in its widest sense, as including all medicinal substances of vegetable, animal, or mineral origin—may fitly be termed '*pharmacopedy*.'" —*White and Humphrey* '*Pharmacopedia.*'

2. The sum of scientific knowledge concerning drugs and their preparations.

Ex. "*Pharmacopedy* (materia medica), galenic pharmacy, prescription reading, and dispensing are essentially shop subjects, based chiefly upon a study of the Pharmacopœia."—*Pharm. Journ.*, March 1, 1902 (p. 177). "From the point of view of *pharmacopedy* the present importation is of special interest."—*E. M. Holmes, Pharm. Journ.*, March 22, 1902 (p. 240).

Phar′ma-cō-pĕd′ics.—The scientific study of drugs and their preparations.

Ex. "Practical *pharmacopedics*, as the scientific study of drugs and medicinal preparations may fitly be termed."—*Pharm. Journ.*, December 28, 1901 (p. 730).

Phar′ma-cō-pĕd′ic.—Pertaining to the scientific study of drugs and their preparations.

Ex. "The heavy crop of *pharmacopedic* research." "A valuable addition o *pharmacopedic* literature."—*Pharm. Journ.*, December 28, 1901 (p. 730).

If these new terms commend themselves to pharmacists and come into general use, I trust that they may continue to retain the wide meanings here given, rather than become as limited in their application as have the various words of similar meaning which have preceded them.

THE OFFICIAL COLOUR TEST FOR STROPHANTHUS.

BY E. M. HOLMES, F.L.S.,

Curator of the Museums of the Pharmaceutical Society.

My attention has lately been directed to the official colour test for strophanthus by the fact that some correspondents complained of experiencing some difficulty in getting the dark green colour with seeds that were certified as genuine. This led me to experiment with the seeds myself, and to my surprise I found that the acid in the same test bottle that I had been using for some months no longer gave the green colour with genuine seeds. I therefore obtained some fresh acid of B.P. strength, sp.g. 1·843, and found that this acid charred the seeds and prevented the green colour being visible. I then obtained from the Research Laboratory, through the kindness of Professor Greenish, sulphuric acid containing respectively 60, 70, 80, and 90 per cent. of acid of B.P. strength. Transverse sections of the seeds gave with these different acids the following results:—60 per cent., no colour in five minutes; 70 per cent., no colour in five minutes; 80 per cent., a dark green colour in less than one minute; 90 per cent., a dark green colour with the testa and hairs charred deep brown. It was evident therefore that a mixture of eight parts of acid of B.P. strength and two parts of water forms the best strength of acid for testing the seeds.

Sulphuric acid rapidly attracts moisture and usually a little water is collected in this way between the stopper and the rim of the bottle, and when the stopper is taken out it runs into the bottle, so that the acid in a test bottle that is frequently used soon becomes weaker. This appears to be the explanation of the difficulty which occurs in getting the reaction. I would suggest, therefore, that in a future edition of the Pharmacopœia the words "sulphuric acid" should be replaced by "a freshly prepared solution containing eight parts of sulphuric acid and two of distilled water." I am indebted to Mr. O. A. Elias for the suggestion that those who find it difficult to cut a thin transverse section of the seed may blanch the seed, as is done with almonds, and thus remove the seed coats. The blanched seed in acid of the above strength speedily shows a very dark green line around the margin which gradually extends over the whole surface, the acid becoming of a dirty yellowish green tint, but with acid of 90 per cent. and pure concentrated acid (s.g. 1·843), the greenish tint is scarcely perceptible in the acid, although the seed quickly becomes dark green.

It has frequently been pointed out that hitherto it has been even more difficult to procure unmixed genuine *Strophanthus kombé* seed in commerce than it is to get unadulterated otto of roses. Until recently it was impossible to persuade collectors in Africa that the seeds of different species of strophanthus vary in strength quite as much as the roots of different species of aconite. Collectors do not as a rule taste poisonous seeds, or the excessive bitterness of the genuine kombé seed as compared with the faint bitterness of those of *S. courmontii* would have been sufficient to convince them of this fact. The consequent variation in the strength of preparations made from the seed and the uncertainty of the action of different samples have doubtless had much to do with the disfavour into which the drug has fallen. There is now obtainable however in the drug market pure, genuine unmixed seed which has been imported in the pod, and at least one wholesale house can now supply seed from pods each of which of some of the seeds have been tested and found to comply with the B.P. test. Preparations made from these seeds, although naturally more expensive, should at all events restore the confidence of the medical profession in the use of an undoubtedly valuable heart tonic, since uniformity of strength can now be relied upon by those using this seed. The importers have adopted the name Mandala brand and the letters A.L.C.L. for Kombé seeds which comply with the test given in the Pharmacopœia.

Since the above note was written, I have learned from Messrs. Parke, Davis and Co. that some strophanthus, giving the green reaction, and purchased by them as "Mandala Brand," proved to be three times as active (when tested in their Biological Laboratory in the United States) as the ordinary (mixed) strophanthus seed of commerce. The seed was purchased in the pod, and the pods were found to yield one-third of their weight of seed.

NOTES ON PHARMACOPŒIA REVISION.*

BY A. C. ABRAHAM, F.C.S., F.I.C.

The Pharmacopœia is to me a subject of constant interest, as I am constantly working with it, and the few observations which I propose to bring forward to-night may, I hope, at least stimulate a discussion which may be to our mutual benefit. In the first place I would wish to raise a protest against the method of deciding whether an article should or should not be included in the Pharmacopœia by calculating how much it is used. This appears to me to be something like giving up the manufacture of amputating knives because the ordinary practitioner very seldom employs them. It appears to me that preparations should be included in the Pharmacopœia if they are of recognised therapeutic value, and if their inclusion is necessary to insure their being of the requisite standard of strength and quality. If this principle is not followed, whenever a medical practitioner requires to treat some comparatively rare disease with one of the less used drugs he is driven to employ the preparation of some specific maker, and the Pharmacopœia is, in so far, reduced in value as a standard to him.

Again, the Pharmacopœia is not primarily produced for the use of pharmaceutical students, nor is it very desirable to reduce its size by nominally omitting preparations which are really there. I have in my mind at the present moment the strong tincture of ginger which, although directed to be made for the preparation of the syrup, is not named in the Index. Some of the criticisms one sees of the Pharmacopœia are most extraordinary. One gentleman blames the Pharmacopœia for want of uniformity in not measuring all liquids, because it measures some. He would, no doubt, measure balsam of copaiva, treacle, and possibly even syrupy glucose, and for the sake of this precious uniformity do other things of a like nature for which an apprentice would be reprimanded.

For my part, I think the Pharmacopœia might well facilitate the operations of the practical pharmacist by giving the weights instead of the measurement of various liquids. At present the practical pharmacist has to find out these weights for himself, and act accordingly. Who, for instance, would think, if he was making four gallons of liniment of camphor, of measuring the olive oil? To do so even in making a small quantity is, of course, a great waste of time, and involves the cleaning of at least one extra vessel; moreover it would be really more satisfactory that the camphor should be present in a fixed percentage by weight. It is now 8 to 29 by weight. The Pharmacopœia could also greatly facilitate operations by stating the exact proportion of water required to produce the required volume in such preparations as liquor morphinæ hydrochlor., liq. strychninæ, etc. In the absence of such directions it is necessary, if accuracy is desired, to wait until the mixture of spirits and water has cooled to the normal temperature before the preparation can be finished; a most unnecessary and troublesome proceeding, as the contraction caused by the mixture of the spirit and the water is well known, and the requisite amount of water might easily be stated. If this practice were adopted it would be a great convenience in many cases, but especially in the case of the dilute hydrochloric and nitric acids, which have to be left four hours to cool.

Aquæ.—I notice that Glass (*P.J.* [4], **11**, 16) very properly points out that essential oils (or many of them) are perfectly soluble in distilled water, and do not require the addition of any objectionable impurities such as phosphate of calcium. It has always appeared to me a most extraordinary thing that so many devices have been proposed for dissolving essential oils in water, when nothing but a little agitation is required, even warm water, as suggested by Mr. Glass, being unnecessary. Mr. Glass, however, falls into a strange error in suggesting that aniseed water can be thus made. Oil of aniseed is quite insoluble in water, and no satisfactory product can be made, either with or without distillation, unless some spirit is used, or something employed to suspend the oil.

Syrupus Calc. Lactophosph.—This preparation is said to be perfectly satisfactory, but I have found it to decompose, and think the proportion of sugar should be increased.

Syrupus Aurantii Flor.—It has been lately pointed out what an unsatisfactory process is adopted for this. I forget at the moment by whom. It can be made in five minutes by rubbing a pound of sugar with 8 fl. ozs. of orange flower water and adding 3 lbs. of simple syrup, mixing and straining. I have made it thus for years.

Syrupus Scillæ.—Merson recommends making this in the cold. I used to do this myself, but gave it up, as I considered that it was quite improper for the following reasons. The active principle of squill is a glucoside, and is considerably altered by heat, and although it may be that a preparation made in the cold would be more active than one made with heat, it must be remembered that the object of the Pharmacopœia is the attainment as far as possible of uniformity, and it would, therefore, be very undesirable that this should be made in the cold unless such a process were officially recognised, and this should not be done until careful physiological experiments had shown that it is the unaltered glucoside which is actually best for medicinal purposes. The evidence of experience points exactly in the opposite direction, for not only has the syrup always been made with heat, but in making the oxymel not only heat, but acid, is used, which must, of course, greatly facilitate the change of the glucoside. Moreover, the tincture which is made in the cold is very little favoured, and it would, therefore, appear more than probable that it is the products of the decomposition of the glucoside which are actually wanted in the preparation.

Standardisation.—Lyon suggests that an alkaloidal standard should be fixed for powdered nux vomica because the Pharmacopœia gives a dose for it. I never remember seeing it prescribed for human beings, and if we begin to standardise crude drugs which are used for horses our lot will certainly not be a happy one. Would it not be better to standardise the horses, to discover their susceptibility to the drug?

Tinct. Camph. Co.—Why not use a given weight or measure of spirit of camphor, and then the preparation can be made in a few minutes?

Tinct. Opii.—Laing (*P.J.* [4], **8**, 157) very properly criticises the process for this preparation. It is no doubt adopted to facilitate its manufacture, and in a laboratory not properly equipped it might very possibly do so, but otherwise it is a very troublesome process.

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* Read before the Liverpool Chemists' Association, March 20, 1902.

Tinct. Valeriana.—It seems a pity that this tincture has been omitted from the Pharmacopœia. It would have been much better to have omitted the ammoniated tincture, because any prescriber can add sal volatile to the other, but now he cannot prescribe the drug by itself unless he goes to an old pharmacopœia.

Unguenta.—Hallberg (*P.J.* [4], **12**, 30) praises the ointments of the British Pharmacopœia unreservedly. I wonder whether he would do so if he had the experience of them that we have had. Some of them are most unscientific and unsatisfactory. Carbolic acid ointment is especially so, and capsicum ointment is a shocking mess. The paraffin ointment basis, although a nice preparation can be made of it, is unnecessarily troublesome, and its composition is founded upon an entire misconception. The idea, I presume, was that as the paraffins were not capable of becoming rancid they were peculiarly suitable for an ointment base, but there are plenty of natural products from which a much better base could be prepared, and are, to all intents and purposes, absolutely non-irritating. However, this is a very large subject, upon which time does not admit that I should enter to-night.

There has, however, been considerable discussion with reference to the stirring or otherwise of ointments during cooling, and for my own part I do not know of any ointment in the British Pharmacopœia that can be prepared in a state of perfection without stirring. I am quite free to admit that there may be some which, under special conditions as to quantity, temperature of the air in which they are allowed to cool, and also the nature of the vessel in which they are set to cool may be produced of a very fair quality without stirring. I have indeed myself produced even one of the paraffin ointments in a very nice state, but I can never rely upon doing it again, the necessary conditions are so difficult always to hit upon. I am quite sure that before any gentleman states that he can make any ointment of the British Pharmacopœia without stirring he should test all the ingredients that he employs, and satisfy himself that they answer the tests of the B.P., and then he should state what is the quantity he made, the vessel that he cooled it in, and, in fact, all the conditions under which it was manufactured. The importance of such conditions as I have named are well exemplified by a discussion which took place some years hence between two pharmacists of reputation as to whether or not the carbonate of ammonia was soluble or not in the reserved distillate, in the manufacture of spirit of sal volatile. One stoutly maintained that it was, and the other equally stoutly that it was not. Both, no doubt, were perfectly accurate, working in their own way, the fact simply being that the one allowed carbonate of ammonia to be considerably decomposed during powdering, whilst the other did not.

THE ARRHÉNAL TREATMENT.

Not long ago the "Cacodylate" treatment seemed to be *the* panacea for all the ills which flesh is heir to, but this, in spite of its much vaunted claims upon the attention of the medical fraternity, is now superseded by arrhénal, a new substance evolved from arsenate of sodium. According to the Paris *New York Herald*, Professor Armand Gautier, of Paris, in pursuance of his studies on organic compounds of arsenic, by means of which he has settled the difficult problem of intensive arsenical treatment without fear of poisoning, has directed attention to this new substance, which presents important advantages over cacodylates. The latter, when absorbed by the intestinal passages, have the inconvenience of giving birth to a residuum with an odour of garlic, of a very poisonous nature, which weakens the patient, causes dyspepsia and gastritis, and, passing into the blood, causes congestion of the kidneys, frequently bringing on albuminuria. These inconveniences can only be obviated by recourse to hypodermic injections, which sometimes ends in a rejection by the system of this mode of administering medicine.

Disodic methylarsenate, otherwise called *new cacodylate*, or, more simply, "arrhénal," which is an arsenical substance analogous to cacodylates, and is obtained by the action of iodide of methyl on arsenate of sodium in presence of an excess of alkali, has not the same inconveniences. Although it contains 34 per cent. of its weight of metalloid arsenic, corresponding with 45 per cent. of arsenious acid, it can be taken without harm either by the mouth or by hypodermic injection in therapeutic doses of from 25 to 100 milligrammes.

The experiments made with this product have determined its great therapeutic value.

In tuberculosis, arrhénal, in doses of 4 to 6 centigrammes, lowers the temperature of the patient, diminishes the coughing, promotes refreshing sleep, and improves the pulse and restores the strength. M. Pujade (of Amélie-les-Bains) attributes to it antipyretic properties, and that of stimulating the appetite, especially when administered in small doses. Mr. A. Robin (of Paris) has seen it, when given in doses above 10 centigrammes, increase the respiratory exchanges, and raise the temperature slightly; but in therapeutic doses of 2 to 5 centigrammes the action of the arsenical salt arrests the movement of consumption, lowers the patient's temperature, and increases weight. The respiratory exchanges, which are always more active in tuberculosis, are moderated, and in favourable cases diminished from 50 to 60 per cent. The weight and the strength then rapidly increase. In diseases of the respiratory organs, in which Koch's bacillus is not involved—diseases which extend from bronchitis to emphysema, influenza, and even asthma—treatment with arrhénal also produces a remarkable improvement, and sometimes even unhoped-for results. In ganglionary congestion of a pronounced tuberculous character, treatment by latent arsenic as it exists in arrhénal suppresses not only accidents of a general nature, but also local accidents, even when advanced, as soon as the glands begin to soften.

In the treatment of *marsh fever*, M. Billot (of Constantine) has found it, from a point of view of its specific properties and its efficacy, more powerful than quinine. All his patients, even those subject to daily attacks of a pernicious character, were cured by one or two, and rarely more than three, injections when treatment by quinine was wholly inefficacious.

Contrary to what takes place when preparations of quinine are used, the stomach, instead of gradually growing weaker under the repeated action of these salts in large doses, assumes remarkable vigour. On the morrow of their last attack, the patients treated with the arsenical salt asked for food.

Lastly, which is another considerable advantage, the deglobulisation of the blood, which in cases of marsh fever increases at each attack, and continues under the action of large doses of quinine salts, is not only arrested by treating with arrhénal, but is replaced by a rapid reproduction of the red globules. In a word, arsenic, when administered in this form, at once completely puts an end to palustrine anæmia.

This arsenical salt is also said to be capable of changing carcinomatous lesions for the better. A lady, fifty years of age, who suffered from carcinoma in the spinal column, consequent upon cancer in another part, who had been twice operated upon, found a considerable local and general improvement under the influence of arrhénal. She regained sleep, appetite, and strength.

Patients who with difficulty bear cacodylic injections, who are in a state of nervous excitement, general uneasiness, and congestion of the face, who have singing in the ears, pains, and a sense of heaviness in the head, sometimes accompanied by temporary fever, were not unfavourably affected when the medicine was given in the form of arrhénal.

Arrhénal salts have still other advantages. They have succeeded in giving a stimulus to the system when cacodylates appeared, either from constant use or from some other cause, to have exhausted their beneficial effect. To adults, arrhénal can be given in doses increasing to 15 centigrammes, without causing accidents of poisoning or serious enteritis; in some cases the doses may be increased to 20 centigrammes per diem. But these limits should only be very exceptionally reached, for, in doses amounting to 10 centigrammes the patient becomes fatigued, and loses the benefit of the treatment. Physicians rarely exceed doses of 5 centigrammes, at which, especially in tuberculous cases, the medicine possesses its maximum action. Above this dose it may cause colic, a slight congestion of the face and lungs, a sensation of cold, and even some fever. With feverish tuberculous patients the temperature, under the action of too strong doses, may rise at least half a degree, and the weight of the patient slowly diminish. But if the treatment be entirely suppressed, the temperature, which had been raised by too strong doses, will fall below the point at which it stood before the beginning of the treatment.

Arrhénal is administered either by the mouth or in subcutaneous injections. It is a medicine without smell and almost without taste, and does not fatigue the stomach. It should be taken at meal times, and has no prejudicial effect upon the digestion. It may be given for from five to seven days in succession, with an interval of rest of equal length.

Its continuous use should not be too prolonged, even when the daily doses are diminished or modified every other day. If given too long without an interval the system becomes charged with an excess of arsenic, which it has not had time to either assimilate, use up, or eliminate.

Administered with these precautions, arsenic may be taken for months, even by the mouth, without causing dyspepsia, gastritis, a smell of garlic, renal or hepatic congestions, enlargement of the liver, cutaneous eruptions, or paralysis.

UNIVERSITY TRAINING FOR PHARMACISTS.*

BY J. F. TOCHER.

At the meeting of the North British Branch, held last month in Edinburgh, the desirability and advantages of a University training for pharmacists were dealt with at considerable length. The various details—such as might be thought of, if applied to the Scottish Universities—were outlined by me, speaking with no authority from any committee, but simply as one deeply interested in the subject, and possessing the special advantage of being in touch with all classes interested in the scheme. The resolution arrived at by the Scottish pharmacists at that representative meeting was of a most encouraging character. As you know, the proposal to take steps to secure such a training for our students was approved of, without in the least committing the meeting to any details elaborated by me or by anyone else concerned in the matter. The Council, which had been previously informed as to what was being done, has been supplied with all the latest information, and is considering the proposal, while the Committee appointed by the Executive is to continue its work. But while all this is true, as applicable to Scotland, it would be a mistake to suppose that a University training is desired on behalf of Scottish students alone, or that any special advantage is being aimed at for Scotchmen. Circumstances have arisen which render the matter urgent in Scotland, and make it necessary that steps should be immediately taken to secure this benefit for our students—if it be agreed to be a desirable benefit. But, as I suggested in Edinburgh last month, English Universities and colleges should be also invited to consider the matter, and if the proposal be practicable, English teachers of pharmacy should be offered the appointments as University lecturers. If a University training be desirable at all, it would be desirable throughout Great Britain. I have already shown how the various courses of lectures could easily be adapted to suit the needs of pharmaceutical students, and that a degree could easily be instituted for the less numerous aspirants to honours, on the basis of the Major with the addition of a curriculum. Owens College, Manchester, is in the potential condition to realise what is here aimed at. It is, I believe, now the object of the three colleges constituting the Victoria University to secure for their respective colleges the status and rights of Universities. In the metamorphosis it would not be a difficult matter to satisfy pharmaceutical aspirations in Manchester, Liverpool, Leeds and Bradford. Then we have the Durham College of Science at Newcastle, granting degrees of the University of Durham. The University of Birmingham, the University of Wales, and even the Universities of Oxford and Cambridge might be induced to consider the project. The University of London grants degrees without the imposition of a curriculum, medicine excepted. I do not know whether pharmacy would be considered by English Universities as of sufficient importance to merit recognition by the institution of a degree and by establishing special pharmaceutical departments or recognising existing schools, but it can be said with confidence that individual expression of opinion has always been of a favourable character. If the University of London requires in the case of medicine evidence of having attended definite courses of instruction prior to examination, it could do so also in the case of pharmacy. It would, of course, recognise instruction given at the School of Pharmacy of the Society. It would also recognise the medical and pharmaceutical schools of the metropolis and elsewhere in such subjects as the University may find the schools specially adapted for. Of course, the various University authorities would recognise each other's certificates, and the way would be paved for the Society to require from each Minor candidate evidence of having attended definite courses of instruction at recognised institutions prior to entering for the examination. The period of study need not be longer than the average period required by candidates at the present time. An academical year, or about nine months, would be sufficient under the existing system. When the Council obtains the power to ensure this provision in favour of pharmaceutical students, it could at the same time secure a slight revision in the titles of the registered chemist. As was suggested in Edinburgh, the successful Minor man of the future could get the right conferred on him to use the title "pharmacist" with a diploma instead of a certificate, while Major aspirants, having gone through the requisite curriculum, would obtain the degree. Perhaps too much prominence has been given to this proposed degree. When we remember that there are a great many different kinds of business conducted by registered chemists, and that the degree is entirely optional, a better idea is gained of its relationship to the qualifying certificate of a chemist and druggist. Will the graduates be drawn from all classes of chemists, and will they be numerous? Just as numerous and perhaps a little more so than Major men. The vision of an invasion of England by an army of Scotch Bachelors of Science in pharmacy has so paralysed a London writer that he is pathetically urging the authorities to stop the project at once. There is in this appeal a want of appreciation of the proportion of things, and perhaps an unconscious attempt to stir up in the English mind prejudice against the "Scotch" scheme. It is flattering to the Scotch to hear even one panic-stricken cry, "the Turks are on us," when a slight demonstration is made, but we know we do not merit such unconscious praise.

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* Address delivered before the Forfarshire and District Chemists Association, at Dundee, on March 19, 1902.

A very good way of checking any invasion—if a reality—is to get up an army, similarly or even better equipped than the invading one, and then not only will the enemy be beaten back, but perhaps the enemy's country would also be invaded. We want that army raised and equipped in England not for the purpose of fighting us, but of maintaining the balance, and because it is a desirable thing in the interests of pharmacy throughout Great Britain.

As I have already said, the proposed degree is just the Major with a curriculum. New life will be infused into it in consequence. The Major has been dropping somewhat into the background, but, with better conditions, it will take its proper place in the domain of pharmacy. In Edinburgh I made brief mention of the conditions imposed on pharmacists on the Continent prior to practice there. Without going into detail, it was shown that the examinations were far more stringent, and that a curriculum was imposed. Now, we are not aiming at the institution of any such stringent conditions prior to practice in this country; but if we can get a degree instituted which would be voluntary in character and approach nearer the Continental standard of practice than the Major does, I think good service would be done to pharmacy in this country.

Comparing the proposed regulations for the voluntary degree now sought to be instituted with the compulsory conditions obtaining in Germany and France, the student would have to pass the preliminary examination in science, which is slightly higher than the medical preliminary, but not even equivalent to the conditions imposed on the French and German entrants to pharmacy. He must pass through a three years' curriculum and be a registered chemist. He passes a first science examination at the end of the first year; the subjects being botany, chemistry, physics and zoology, and a final examination in botany, chemistry, materia medica, and pharmacy at the end of the third academical year. The standard in these subjects, although high, is not so high as the Continental one, neither does it include all the subjects, a knowledge of which is required prior to practice there.

But let us go back to the main object of this scheme. Are we to throw away the golden opportunity of securing for our successors better means of acquiring the necessary knowledge for the qualifying examinations? Are we to spurn the means of thoroughly equipping pharmacists so as to make them successful men? This is all the scheme aims at. It cannot be too often said that it does not contain even the germ of a proposal to alter the syllabus of the Minor Examination. That syllabus contains all that is necessary to meet the present-day needs of pharmacy. But, taking the results of examinations held from time to time into account, it is only too evident that the average proficiency or preparedness of the candidate is not what it ought to be. And for this teachers of pharmacy cannot be held responsible. At the most, they are responsible—as all teachers are—only in so far as they may fall short in their capacity for teaching, and it is well known that the teachers are individually very capable men. Of the three persons involved, the assistant student himself stands first in the scale of responsibility, the master next, and the teacher last. What is the nature of our responsibility as masters? Teachers bear testimony to the fact that in many cases the student has been very indifferently trained in the art of dispensing and in the art of pharmacy generally when he enters into his voluntary course of training at the school. Are we, then, abandoning the art of pharmacy and becoming mere distributors of factory products? There is, I believe, in almost every pharmacy the opportunity of practising the art and of preparing medicaments for public use. If then, we are permitting ourselves to become finished goods distributors, it is high time for us to review our position. The demand for ready-made medicine has arisen through the enterprise of the makers. The elegance of finish, the easy handling, and the readiness for administration all combine to form an attraction to the prescriber. But there is the weighty objection that factory-made remedies cannot be made anything like universally applicable, owing to the infinite variation necessary in the dosage and combination of the various remedies. Hence extemporaneous pharmacy is an absolute necessity. It is absolutely necessary to have skilled persons to prepare at the moment the combinations considered necessary by the physician as applicable to the cases he has under diagnosis and treatment. In the public interest the pharmacist must resist ready-made pharmacy, although it be at the expense of his convenience.

We can do this by not being above taking a lesson from the enterprising people who manufacture the kind of medicaments referred to. Without referring to galenic pharmacy, which is also somewhat neglected, there is no reason in the world why we should not at the moment dispense all the coated pills, tablets, perles, capsules, and the like, just as we dispense pills, suppositories, and mixtures. Many pharmacists do so, and find it a most profitable transaction to themselves and satisfactory to the physician, for he can prescribe exactly what he wants. The net result to the pharmacist who practises extemporaneous pharmacy to the outmost is that it is most profitable to himself, and that it affords the young pharmacist the best opportunity for acquiring the practical knowledge which is to stand him in good stead in after life. It is, perhaps, idealistic to expect extemporaneous and galenic pharmacy to be fully practised in every part of the country, but it can be practised to a much greater extent than it is at present. It is the object in establishing a university pharmaceutical department to provide to the full facilities for acquiring a practical knowledge of pharmacy in all its departments. At the School of Pharmacy the student completes his training, or, if he has had little former experience, gets a thorough training in the art of dispensing as usually practised. He, of course, gets besides instruction in the subjects as specified in the Minor syllabus. In the new departments he will also take part in the more common processes of galenic pharmacy, and will acquire the art of mechanical production as well. This will be of the utmost financial importance to him in after life, and he will be able to check the disposition of many physicians who are apt to confine themselves to a groove of listed prepared medicaments. I indicated in Edinburgh how the various University courses could be adapted to meet the requirements of pharmaceutical students, and I also pointed out that if the student passes the Medical Preliminary Examination, he will be eligible to secure the payment of fees by the Carnegie Trust, as the Medical Preliminary is recognised as the standard for the Faculty. The difficulty that seems to present itself most prominently in the minds of those giving the proposal some consideration is that there are now no apprentices joining the craft, and therefore there will soon be no students. The dearth of apprentices arises through the high standard of the entrance examination, according to many. According to others, other causes are in operation against the pharmacist. Let us pursue this matter to a logical conclusion. If it be true that no apprentices are joining the ranks of pharmacy, and if that condition were to continue, it must follow that the demise of pharmacy is in sight. After the pharmacists of to-day have passed away, the present-day student preparing for the Minor, when he qualifies, would have a glorious monopoly all to himself, and then there would be an end to legitimate pharmacy. It would go into the hands of the stores and back to the medical profession. It would last probably another thirty or forty years, just in time to bring the celebration of the centenary of its birth coincident with its decease and burial. That is the logical outcome of our everyday dyspeptic remarks. We cannot help making them. We are in great trouble. If you can get apprentices for us, we will be much obliged. There is nothing before us but unqualified practice. There may be one little argument which operates slightly against our lugubrious talk. It is that we can't get boys to come, even without any condition as to passing the Preliminary Examination. They will scarcely look at us at all. But for all this we ought to be most sincerely thankful. We have partially brought it upon ourselves; in other respects it is a trade consideration. We have so ventilated our grievances and trained the public mind to the belief that instead of the proverbial profit of a shilling on the thirteen and halfpenny article, we are eking out a miserable livelihood, that parents won't let their boys go into poverty. We have so kept our past apprentices in close confinement, with all the drudgery of a long day, that their best advice to their admiring younger brothers who want to join the ranks of pharmacy is "Don't." The disillusion of the public is complete. They know as well as we do that there are too many chemists for all the demands. The condition of pharmacy at the present day is not very bright. The country is choke full of pharmacists, and there is depression in business. Young men naturally fight shy of an unremunerative calling which demands close and constant supervision. Boys are showing a general disposition to keep clear of shops, and at present they are making no exception with chemists—rather the reverse. Consider then the effect of the following advertisement:—

> WANTED, for Chemist's Shop, a Well-educated Boy, about sixteen. Must possess lower-grade leaving certificates in Latin, English, mathematics, and French. Hours ten to five. Wages 30s. a week. No windows to clean or bottles to wash. Instruction constantly given in dispensing. Three years' engagement. Bonus of £50 given at termination of apprenticeship, in lieu of further instruction.

I presume that advertisement would fetch an apprenticeship. I am not prepared just to go that length myself, but I will go a step or two in that direction. I don't want to go the full length of the advertisement, because then we would have too many apprentices, and the craft would continue to be overcrowded and unremunerative. All the profits would go to the apprentices, while the pharmacist would be living on bread and water, so that pharmacy might continue a separate calling. There is just the happy medium between the present terms given to apprentices and the somewhat rosy terms I have just indicated. We are at the extreme end of the swing of the pendulum, and ought to be thankful we are not further inundated with apprentices, otherwise a considerable proportion of open doors would have to be compulsorily closed through want of business. The lack of apprentices cannot arise solely or to any great extent through the conditions imposed respecting elementary education. The Medical Preliminary Examination cannot be called an examination on a high standard. The conditions operating against us are, in my opinion, (1) too stringent conditions of apprenticeship, (2) the examinations without a clearly defined course of training, (3) apparent future prospects poor, (4) disposition of boys to shun employment in shops. I think the time has come for a general revision of our conditions of apprenticeship and a general movement among pharmacists to render apprenticeship uniform and more attractive throughout the country. Not only so, but we ought to revise our own hours, and make a serious practical attempt to effect reform among ourselves. We will then make our craft attractive to the youth of the country and slowly re-establish the normal condition of things in the pharmaceutical world. So far from thinking that pharmacy is on the decline, my opinion is that it has always been improving, and will always improve. A very little study of pharmaceutical history soon brings out this fact, and however much surrounding circumstances may tend to produce pessimism among us, we ought to shun it as we would the plague, and by intelligently gauging the facts work hopefully and unitedly to benefit the craft we have elected to join as a means of livelihood. But I am very widely digressing from my subject. I have been led to speak in this way simply because it has been said that the condition of pharmacy does not warrant a University training for our students. Let us lay aside all those considerations as scarcely bearing on the object of the scheme. Under existing circumstances aspiring pharmacists must pass the Minor Examination prior to practice. My proposal is simply one to more thoroughly prepare candidates for the examination, and by the means of a great benefaction it is likely that they can not only more thoroughly equip themselves for examination, but also do it at little or no expense, provided they go the right way about it. The question we have got to put to ourselves is, "Whether University training is desirable for students working towards the Minor Examination?" Another question is, "Shall we strive to secure for our students the same benefits as medical students enjoy by means of the Carnegie Trust?" The last question is, "Whether it would be worth while having an honours degree, open only to ourselves, the obtaining of which would encourage research, equip men in advanced pharmacy, and raise the status of the craft?" Naturally, I think, those three questions should be answered in the affirmative. We are not going to get chicken-hearted because our aspirations at the first blush look Utopian. The scheme is not an impracticable one. It is soundly practical, capable of early realisation, if we unitedly strive to get it carried into effect. It is evident we are not going to be smothered by indifference. We are certainly not going to be put down or frightened by the first fanfare we hear in the distance. We are going, I hope, to examine this project thoroughly and practically point by point; to alter and adjust it to meet the views of the majority; to invite the attention of our English brethren to its terms; to strive with all our might to further our craft by maintaining a serious and dignified view of our functions and by associating ourselves with institutions, having lofty and desirable objects, where the betterment of pharmacy can go hand in hand with the formation of a more cultured mind, a more skilled hand, and a more highly developed scientific instinct.

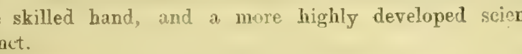
CHEMICAL SOCIETY.

At a meeting held on Wednesday, March 19, PROFESSOR EMERSON REYNOLDS, F.R.S., President, occupied the chair. There was a good attendance of members, and it was evident that the new arrangement of holding the alternate meetings at 5.30 p.m. finds favour with a considerable number of members.

After the usual business had been disposed of the senior Secretary said that Owens College had celebrated its jubilee last week; he then read a letter which had been sent to the College conveying the congratulations and hearty good wishes of the Chemical Society. Dr. CHATTAWAY communicated the first paper on

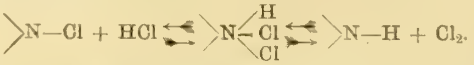
NITROGEN CHLORINE COMPOUNDS CONTAINING THE PROPIONYL GROUP.

The author said that the aniline compounds had been chosen to work on. By the action of hypochlorous acid on aniline an additive compound was first formed, wherein the nitrogen becomes pentavalent, but this immediately broke down into the nitrogen chloride and water, as shown in the equation:—



$$>N{-}H + HOCl \longrightarrow >N\begin{smallmatrix}H\\-OH\\Cl\end{smallmatrix} \longrightarrow >N{-}Cl + H_2O.$$

On treating the chloro-compound with potash hydrogen replaces chlorine; and that is characteristic of the nitrogen chlorine compounds, whereas in the case of a halogen attached to carbon, hydroxyl would be substituted. That, of course, is an important fact, and one which is utilised in determining whether a halogen is attached to carbon or to nitrogen, as in some recent work by Dr. Chattaway. The chief reactions of the nitrogen chlorine compounds were next described: these in some cases were said to be reversible reactions, of which the following is a good example:—



$$>\mathrm{N{-}Cl} + \mathrm{HCl} \rightleftarrows\ >\mathrm{N}\begin{smallmatrix}\mathrm{H}\\ \mathrm{Cl}\\ \mathrm{Cl}\end{smallmatrix} \rightleftarrows\ >\mathrm{N{-}H} + \mathrm{Cl_2}.$$

The chlorine substitution products of the stable propionanilides were then fully dealt with. Two symmetrical chloro-derivatives were of a bright canary yellow, whilst the remainder were pale yellow.

Dr. Forster wished to know whether those propionyl compounds differed markedly from the corresponding acetyl compounds previously described by Dr. Chattaway. In reply Dr. Chattaway said there was very little difference except in the solubility of some of the compounds.

Mr. Wade communicated the next paper on

METALLIC CYANIDES AND THE CONSTITUTION OF HYDROGEN CYANIDE.

The history of the subject was first referred to, mentioning especially Gautier's discovery of ethyl isocyanide and his subsequent work which led him to the conclusion that hydrogen cyanide was the lowest nitrile. The various theories which obtained as to the constitution of these bodies were enumerated. Proceeding next to a discussion of the results of his experimental work, the author said that a good deal had been negative, but there were a few points of interest which he would allude to. On distillation of ethyl potassium sulphate with potassium cyanide a large proportion of ethyl isocyanide was formed. The oily distillate was carefully fractionated, and the fraction between 79-81° was considered to be principally the iso-compound. It was found, however, to contain only about 10 per cent., although the boiling point was so close to that of ethyl isocyanide. Subsequently it was shown that a mixture of the isocyanide and alcohol had practically the same boiling point. In conclusion it was said that if there was sufficient electro-chemical slope between the reacting groups an additive compound was formed by linking to the carbon, which then split up. Owing to lack of time it was impossible to go fully into the constitution of hydrocyanic acid, but the author said he would merely say that he considered it to be formo-nitrile.

Professor Tilden said this concluding sentence astonished him. He pointed out the different physiological action of the nitriles which were considered non-poisonous, and he thought this fact deserved to be taken into account.

Mr. Wade, in reply, said that he had taken notice of the physiological action. He found that the nitriles acted in exactly the same way as prussic acid, only that the effect was not immediate, as in the latter case. He and his assistants had had somewhat unfortunate experience of this. The action was cumulative, and produced effects which varied from a bilious attack to a condition simulating jaundice. The nitriles appeared to act on the blood colouring matter and convert it into bile pigment.

This was followed by a paper on the

CONSTITUTION OF LIMETTIN,

By Professor Tilden and Mr. Burrows.

Professor Hartley next communicated some results of his work on the

ABSORPTION SPECTRA OF METALLIC NITRATES.

Photographs of the absorption spectra of nitric acid and various nitrates were shown, and it was pointed out that the band shifted towards the red in the case of salts of high molecular weight. A full discussion of the conclusions at which the author has arrived was held over for a subsequent paper.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

CREAM OF TARTAR.

At Haddington, on Monday, March 17, Alexander Harkess, grocer, Cockenzie, was summoned for having sold a quarter of a pound of cream of tartar containing 7 per cent. added impurity. For the defence, Peter Lawson, wholesale grocer, Edinburgh, stated that he supplied the cream of tartar in question to the accused. He produced a counter-analysis from Mr. Falconer King, Edinburgh, showing 9 per cent. impurity. No standard of purity was laid down in the Act, and it was impossible to eliminate impurity in the manufacture except at a cost incompatible with the selling price of the commodity. The cream of tartar sold was the ordinary commercial article. The Sheriff imposed a modified penalty of 10s.

Medicine Stamp Acts.

ALLEGED RECOMMENDATION ON LABEL.

At the Town Hall, Brentford, on March 24, Mr. F. Sanguinetti, chemist, 120, Uxbridge Road, Ealing, W., was summoned by the Inland Revenue authorities, under the Medicine Stamp Duty Acts, for selling, unstamped, an article liable to duty. There were several gentlemen on the Bench, over which Mr. Montague Sharp presided. Mr. Dennis, barrister, prosecuted for Somerset House, and Mr. C. F. Kirby defended on behalf of the Chemists' Defence Association.

Mr. Dennis said the summons was taken out under the Act 52, George III., cap. 150, and on conviction the defendant was liable to a penalty of £10. Mr. Dennis, reading from the Act, said it was necessary to prove first that the article sold was a medicament "to be used or applied externally or internally . . . . for the prevention, cure, or relief of any disorder or complaint incident to or in any wise affecting the human body," and that this preparation was "made, prepared, uttered, vended, or exposed to sale" by some "person or persons." This, he thought, would not be disputed, and, that being so, the article became liable to duty in four ways, viz., (1) by an occult secret or art for making or preparing; (2) by a claim to an exclusive right or title to making or preparing; (3) it must have been patented under the Great Seal, or (4) it must be held out or recommended to the public as a nostrum, proprietary medicine, or specific, or as beneficial for the prevention, cure, or relief of any distemper, etc. In this case he relied upon Division 4, because the label was, he held, sufficient to bring it under the Act.

> F. SANGUINETTI, CHEMIST, EALING, W.
>
> PURE GUM PASTILLES.
>
> **INFLUENZA.**
>
> DELIGHTFULLY SOOTHING
> TO SINGERS & PUBLIC SPEAKERS.
>
> *MUST BE KEPT IN A COOL PLACE.*

The Chairman asked how it was that not more of these prosecutions took place.

Mr. Dennis replied that a great many purchases had been made and many penalties recovered. It was a very important duty, and intended to cover everything held out or recommended.

The Chairman: Why not say so, then? Is the Revenue sufficiently high already?

Mr. Dennis: There are certain exemptions.

Mr. Kirby: This label is not within any exemption; we claim that it is outside the Act altogether.

Mr. Dennis, proceeding, said the pastilles were an "official" preparation which the label held out or recommended for the prevention, cure, or relief of an ailment, and therefore it came under the Act.

A long argument took place here between counsel and the Bench, the latter holding that the word "and" was an alternative to the word "or" in the general charge of duty, and that, therefore, in order to succeed, counsel must show that the label was liable under all four divisions mentioned.

Mr. Dennis, continuing, said the Act was so comprehensive in scope that even the title "Cough Mixture" rendered the preparation liable to duty; but the Commissioners of Inland Revenue did not press that claim, provided there was nothing else which recommended it. In this case they would not have objected to the words "Pure Gum Pastilles—Influenza," alone, but the defendant added beneath these words something else to induce the public to buy them, and therefore the Commissioners rigidly adhered to the Act.

The Chairman: Where does the label hold the article out as good for any ailment? It does not say it is good for influenza.

Mr. Dennis: I hold that the whole object of the label is to induce the public to believe that the preparation is good for influenza.

Mr. Jameson, a departmental official of seventeen years' standing, gave formal evidence of the purchase. In reply to Mr. Kirby, he stated he was not instructed to purchase the article in question, but saw it on the counter. He thought it was held out specifically for the relief of influenza. He was questioned as to Alpe's book on Medicine Stamp Duty, but Mr. Dennis objected. The book was only a text-book, and not an authority.

The Chairman asked for any High Court decisions governing this case, and Mr. Dennis quoted Smith *v.* Mason, where it was held that Gregory's Powder, although in the British Pharmacopœia, when recommended for flatulence was liable to duty.

Mr. Kirby, for the defence, contended that "Influenza Pastilles" was merely a designation. If merely selling the article so designated made it liable, why did the Act specify that it must be recommended? The case rested upon the label, and unless that "held out" the article it did not come within the Act. Was there, then, any "holding out" on the label. If so, it was the mere word "influenza," because the words "delightfully soothing to singers and public speakers" had no relation to any ailment. Since 1812 the view of the Inland Revenue authorities had been that merely to describe a mixture by the name of an ailment was not "holding out," but merely a designation.

The Chairman was still in doubt, apparently, as to the meaning of the section, being of the opinion still that the liability, to succeed, must come under the four divisions mentioned. He asked Mr. Kirby for his opinion, and the curious incident of the solicitor for the defence pleading the cause of his opponent was witnessed. Mr. Kirby was emphatic that the liability, if any, came under Section 4 only. Proceeding, he said the Inland Revenue—supported by Alpe's book—had not objected to the word "cough" in "Cough Mixture," nor to "Influenza Mixture." What was the difference between that and this label? He also quoted the names of many herbs, such as "Gout Weed"; but it did not follow that in selling this the vendor recommended it for gout.

Mr. Dennis was allowed to make a further statement. The Board, he said, recognised the danger of letting a mixture get into the hands of the public without a specific name, and they therefore allowed the use of a name such as "Cough Mixture," but it was a concession merely. He then entered into a long technical explanation of the general charge of duty, and concluded by stating that if the pastilles were not good for influenza the word should not have appeared on the label. If there, it was a direct recommendation. The preparation was not only held out for influenza, but for sore throat or irritation of the throat, from which speakers and singers suffered.

After consultation the Chairman said it was a very extraordinary case. The Bench thought the Act was badly drawn up and wanted modernising. They did not think the case of the Gregory's Stomachic Powder governed this one. The solitary word "influenza" stood by itself, and they could not say that the words on the label beneath assisted it. Therefore, as far as the label was concerned, they failed to see where the case mentioned affected it. They were of opinion that the mere word "influenza" was not a holding out as a nostrum or specific for the cure or relief of any ailment, and the summons would therefore be dismissed.

LETTERS TO THE EDITOR.

The Use of Distilled Water.

In his letter published in the *P.J.* of March 12 "Hackwa" has very properly called attention to the desirability of pharmacists being able to obtain a distilled water perfect in its production, and not contaminated after distillation by being put into soiled bottles. After a practical experience of nearly forty years in producing distilled water on a manufacturing scale I am warranted in saying that it is only a question of a strict adherence on the part of the producer to well-known engineering principles and a co-operation on the part of the receiver (the pharmacist) in taking certain wholesome precautions, that the supply may be invariably found when wanted in a uniformly good condition. The following leading facts are worth consideration:—

1. The water must not be condensed waste steam of the laboratory, but must be a *bonâ fide* distilled water.

2. Distilled water of almost absolute chemical purity may be obtained by the use of the machine known as a ship's condenser. By its agency water as pure as that which is drunk (both aerated and carbonated) on the Atlantic and other steamers can be ensured.

3. It is not practicable that distilled water, used as it is at times in considerable quantity, can be sent from the wholesale druggist to the pharmacist in Winchester quarts. A very excellent arrangement, however, is to adopt a white earthenware bottle (of 2 or 3 gallons capacity) with a label burnt in blackest possible type on its shoulder thus:—"Distilled Water. Bottle not to be used for other purposes."

4. Stone jars specially made for the use of distilled water should not be used for any other purpose. The wholesale druggist certainly is unlikely to use the bottles that he has taken so much care and precaution to have made for him, for other purposes than the use for which such bottles were intended.

5. Pharmacists would do well to instruct their apprentices, porters, and others who handle "empties" that no other liquid, under any consideration, is to be transferred to such bottles, inasmuch as notwithstanding every precaution, including subsequent cleansing, may be resorted to, it is not easily possible to make a jar that has contained

syrup of iodide of iron (the liquid mentioned by your correspondent) a suitable receptacle for distilled water.

In practice I have found that attention to the foregoing points works well, and I venture, therefore, to put it before your anonymous writer and your readers to show that there is a way out of the difficulty, provided both pharmacist and manufacturer give reasonable attention to the subject.

Charles Umney.

Southwark, London, S.E., March 25, 1902.

Extractum Gentianæ.

The thanks and gratitude of all pharmacists are due to Mr. E. N. Butt for his generous aid in fostering the abilities of earnest students of pharmacy in the outset of their honourable career, and the pleasing result detailed in a recent issue is not only gratifying to the founder of this new school, but an encouragement to those young men who are destined to occupy an important position in the noble craft of the future. Without, however, the slightest wish to criticise, or in any way to lessen the value of Mr. Lenton's work, I may perhaps be allowed, as a very old working pharmacist, to state that I operated on gentian root many years since with very satisfactory results. My plan was (1) to soak the root in distilled water for twelve hours, drain it, and then slice it by means of the chopping block. Then (2) transfer it with the water to a percolator, and with a pressure of four atmospheres force the root to yield its extractive matter until quite exhausted. (3) Pour the concentrated clear infusion into a vacuum pan and evaporate to a proper consistence. The extract thus prepared retained all the original characteristics of the drug in smell and flavour. I made other preparations by the same process, notably ext. ergotæ liq. Messrs. Herrings and Co. were much pleased with the last-named article--particularly with the rapidity of production. I would undertake to present a quantity, which their laboratory man said would occupy a fortnight, in the space of forty-eight hours. My extract was approved not only by local practitioners, but by Dr. Phillips, Mr. Greenhalgh, Spencer Wells, and other obstetricians of celebrity. Returning to the subject of "ext. gentian," it is acknowledged to be the best excipient for pills, as stated by Mr. E. M. Holmes and Mr. Peter MacEwan, not to mention its valuable therapeutic qualities. In conclusion, I regret to say that on leaving Richmond my beautiful automatic apparatus, which cost £75, was broken up and sold for old metal—*sic transit gloria vitæ.*

Deal, March 18, 1902. R. Goodwin Mumbray.

B.Sc.Pharm. v. Ph.C.

The degree of B.Sc.Pharm., suggested by Mr. J. F. Tocher, cannot be more useless than the title Ph.C., but it might be a means of retrieving ground lost by the Society in permitting the establishment on the opposite side of the "Square" to take away the work of chemist from the pharmaceutical chemist, when I have no doubt he would willingly have gone beyond the requirements of the Major Examination (had the Society been far-seeing enough to extend the Syllabus) and performed the work pertaining to the appointment of analytical, consulting or other sort of chemist; in fact, Mr. Tocher is himself an example of a pharmaceutical chemist who has not even had the advantage of a Bloomsbury education, yet he has been capable of obtaining the F.I.C., and more than likely to do credit to it—more honour to him say I, and less to the Society that allows a new institute to take root in sight of its own house for the purpose of monopolising its scientific attainments, and at the same time allowing stores not only to take root, but to throw out branches so as to stifle the existence of the retail man. The unfortunate war in South Africa has shown how much the pharmacist is appreciated by medical men when they offer him 3s. 6d. for his services at the front as a dispenser; it may be "to cook's sons or duke's sons"—and are at the same time admitting men without a pharmaceutical qualification to military hospitals at home as dispensers on 5s. a day, with rations. That qualified men should have to enlist in the ranks of the R.A.M.C. with the intention of following their legal calling shows that they have, to all intents and purposes, lost that sense of respect for themselves and the Society to which they should belong, or that their vocation must be in a very bad condition; but it would appear that the open shop is the beginning and the end of pharmacy, there being no protection for the public unless scheduled poisons pass openly from one person to another in exchange for a coin currency. Amongst the professional men and women who have gone to South Africa in Government employment, as Volunteers or otherwise, to follow their respective professions, all have been treated as commissioned officers with the exception of those connected with pharmacy. The Naval estimates of 1900-1901 show an increase of £40 to the salaries of dispensers in Naval hospitals obtainable by the time most of them reach fifty-six years. The Naval estimates of 1902-1903 show an increase of £400 to the medical director and £300 each to the medical inspectors in Naval hospitals. Other branches of the medical profession have had an equally substantial rise, payment to commence next month. Should Mr. Tocher's suggestion be accepted and a University degree granted, it will be interesting to note if any of the B.Sc.Pharm. men will join H.M. services as compounders or dispensers. If the same disparity in pay and position continues between the professions of medicine and pharmacy as shown above, and if the training of both be defrayed by the Carnegie trust, I need hardly say which will be the more popular. Let us hope that University authorities may be more successful with the lifebuoy of advice to young men thrown out on the sea of existence than have been the "bosses" at Bloomsbury Square and York Place.

March 17, 1902. "A Life-Member" (126/2).

⁂ **Several letters are unavoidably held over.**—[*Ed. P.J.*]

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.;" and must also be authenticated by the names and addresses of the senders.

Optician (W. T.—71/32).—The examinations are optional, no qualification being required by the law.

Lemonade (J. D. R.—72/1).—Presumably you mean diluted phosphoric acid, in which case the quantity you mention may be added with safety

Roots (D. K. M. 21/33).—They are the roots of the common horseradish, a description of which you will find in the British Pharmacopœia.

Household Ammonia (H. H.—71/34).—Yellow soap, 4 ozs.; pearl-ash, 2 ozs.; strong solution of ammonia, 12 fl. oz.; distilled water, 6 pints. Cut the soap small and dissolve in the water, then dissolve the pearl-ash in the solution and, when the mixture is nearly cold, add the ammonia. Keep the preparation in well-corked bottles.

Reactions in Mixture (J. W. H.—72/2).—(1) In the case of (*a*) free iodine may be liberated, while a red colour, due to the formation of sodium nitro- and diazo-benzoates, will result in the case of (*b*). Neutralisation of the spirit will not prevent the formation of the red colour. (2) The intention of the prescriber will not be frustrated entirely, but it would be well to direct his attention to the changes which are brought about.

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LONDON: SATURDAY, MARCH 29, 1902.

THE MEDICINE STAMP DUTY.

Among the misconceptions that have prevailed concerning the Medicine Stamp Act and its provisions, there is probably none more remarkable than that which has led to the popular belief in the Government stamp being evidence of some authoritative recognition that the articles to which it is attached really possess the merits and virtues attributed to them by their makers. That is far from being the case; in fact, the original imposition of the stamp duty upon medicines, in 1783, was intended to serve not only as a means towards raising the necessary supplies to defray the expenses of the war in which the country was then engaged, but also, more specifically, to repress the exaggerated laudation of secret remedies then practised even by regular medical practitioners, as for instance in the notable instance of Dr. James's Fever Powders. According to the provisions of the Act, liability to stamp duty was the consequence of a claim that the maker of a medicine possessed an occult secret or art for making or preparing it. Liability was also a consequence of declaring such medicine to be beneficial for the prevention, cure, or relief of any distemper, malady, ailment, disorder, or complaint, incident to or in anywise affecting the human body. Such a declaration might be made in the label upon the packet or vessel in which the medicine was offered for sale, or by public notice or advertisement, or in written or printed papers or handbills delivered with the medicine. Medicines prepared or sold under authority of Letters Patent were also liable to stamp duty, but since that privilege did not then involve disclosure of the process employed, such medicines were really secret preparations. The recommendation of secret or proprietary remedies may therefore be regarded as the essential condition of liability to stamp duty. An annual licence to sell such dutiable articles was to be taken out by all persons except surgeons, apothecaries, druggists or chemists, while selling them without a licence likewise entailed a penalty.

But the Act also provided special exemptions from liability to stamp duty which do not appear to have received the attention they merit. Any medicinal drug or drugs sold without mixture or composition with any other drug or ingredient, was exempted from liability to stamp duty; but that exemption was to apply, in regard to the sale of drugs, only when a drug was sold by any surgeon, apothecary, chemist or druggist who had served a regular apprenticeship, etc., or by a person licensed to sell dutiable medicines. In that provision of the Act is to be recognised an obvious intention to establish a distinction between such sellers as were qualified to deal in drugs and others who were not so qualified. Then in regard to medicines a similar distinction is made between the secret or proprietary remedies liable to stamp duty and medicines of another class, which are particularly described in the several Acts as any mixtures, compositions or preparations whatsoever, mixed or compounded with or prepared from medicinal drugs, etc., having denominations, properties, qualities, virtues and efficacies that are known, admitted, and approved of in the prevention, cure, or relief of any disorder, malady, ailment or complaint incident to or in anywise affecting the human body. Apparently the object of the distinction so made between these last-mentioned medicines and secret or proprietary remedies was to declare that they were not unreservedly intended to come within the scope of the Act, but to be saleable, without liability to stamp duty, at least, by the specially described persons above mentioned. That inference appears to gain further support from the circumstance that while the exemption from duty provided in regard to the sale of drugs extends to persons licensed to sell dutiable articles as well as to surgeons, apothecaries, chemists or druggists, the exempting provisions relating to medicines of the class described as not being liable to duty, do not include the alternative stated in the provision relating to the sale of drugs, viz., that they may be sold free of duty by any person licensed under the Acts.

That elaborate provision for exemption cannot well be regarded as exempting nothing and no one, so a question naturally arises as to the medicines to which the exemption applies, and as to the extent to which it applies to them. If the known composition of a medicine, its admitted virtues, as well as the fact of its efficacy in relief of any ailment being approved of, are grounds for the exemption of such medicine from liability to stamp duty, when sold by the persons specified in the special exemptions of the Act, do not those provisions apply to well-known domestic remedies and to the official preparations of the British Pharmacopœia? Does not the obvious distinction drawn as to the persons selling them, indicate that in one case such medicines are liable to stamp duty, in the other they are not? Moreover, the exemption of those medicines, according to the seller of them, must also extend to one of the conditions by which secret or proprietary remedies are rendered liable to stamp duty, viz., the recommendation of them for the remedial purposes they are applicable to. Such recommendation of a medicine that, like the chalk mixture of the Pharmacopœia, has well-known applications as a remedy, amounts to nothing more than the statement of a fact that is as patent as the name of the article, a piece of information necessary for the proper use of the medicine, and quite as requisite for guiding the purchaser in the use of it, as the name on the label.

ANNOTATIONS.

The National Physical Laboratory at Bushey House was formally opened by the Prince of Wales on Wednesday, March 19, and England is now free from the reproach that it possessed no public institution where problems of industrial importance could be investigated scientifically and in a thoroughly satisfactory manner. As already explained in the Journal (see *ante*, p. 71), the new laboratory is a branch of Kew Observatory, and such work as has been carried on to a limited extent at Kew will be undertaken on a greatly extended scale in the new establishment. Lord Rayleigh is the Chairman of the General Board which will direct the work at Bushey House, Dr. Glazebrook is chief of the laboratory staff, and the Executive Committee includes representatives of commercial interests as well as men of high scientific attainments. It may be anticipated, therefore, that the researches to be conducted will possess an eminently practical character. As a matter of fact, it is understood that it is intended to place at the service of manufacturers and workmen the results of experiment and trained commonsense, to break down the barrier which conservative instinct and habit have established between theory and practice, and—by the introduction of systematic and modern methods—to redress the balance of commercial supremacy. According to Dr. Oliver Lodge, who shares with the late Sir Douglas Galton the credit of suggesting the establishment of the new laboratory, the staff of the institution will be engaged in pioneer work, verification work, systematic measurements and examination of the properties of substances under all conditions, the precise determination of physical constants, observational work (testing of instruments), constructional work (gratings and optical glass), and the designing of new and more perfect instruments.

This Ambitious Programme cannot, of course, be carried out in its entirety without the expenditure of large sums of money, much larger than are at present available. The sum of nineteen thousand pounds has already been spent in fitting up the laboratory, and a yearly income of four thousand pounds has been guaranteed by the Treasury, but those amounts appear trifling in comparison with the two hundred thousand pounds expended in fitting up the Berlin Physikalisch-technische Reichsanstalt, founded by Werner von Siemens and von Helmholz, or the sixteen thousand pounds annually devoted to the maintenance of that magnificent institution. Again, in the United States, sixty thousand pounds has been devoted to the establishment of a similar laboratory, the guaranteed income of which will be nine thousand pounds per annum. There is no doubt, however, that further funds will be forthcoming as the laboratory at Bushey House is shown to be capable of producing useful results, and it is noteworthy that the Prince of Wales, after formally declaring the institution open, was able to announce the promise of further substantial help. It is hoped that difficulties which now beset British trade, owing to the absence of standardisation in our methods, will be overcome gradually by the staff of the National Physical Laboratory, ready means being supplied for enabling physical, chemical, and electrical students, as well as mechanics, to compare their work with the work of others. In a word, the new laboratory represents an attempt to bring trade and industry into open alliance with science, in the hope of checking the threatened departure from these shores of supremacy in commerce and manufactures.

In Applied Chemistry British supremacy is already a thing of the past, Germany now taking the lead in that particular branch of industry. The most notable example of that fact is afforded by the manufacture of colouring matters derived from coal-tar products, the latter being exported chiefly, as it happens, from this country. A lecture on this subject was delivered at the Royal Institution last week by Professor Otto H. Witt, of Berlin, who showed to what an amazing extent the trade in such dye-stuffs has grown. It is now possible to produce more than three million different dyes from coal-tar products, and a magnificent series of aniline and anthracene colour derivatives, arranged for the purpose of illustrating Professor Witt's lecture, is now on exhibition in the library of the Royal Institution. Specimens of the dyes are shown side by side with dyed stuffs, cottons, woollens, and silks, some of which are remarkable for the beauty and delicacy of their shades. In addition, the Badische Aniline Company is exhibiting a complete series of artificial indigo products. The method of producing artificial indigo was very fully described by Professor Witt, who concluded his lecture by predicting that the day is approaching when the indigo plantations will have disappeared, and the vast areas in India now devoted to the cultivation of the indigo plant will be used for growing rice and other foodstuffs

The New Education Bill introduced by the Government has for its object the co-ordination of primary and secondary education under one authority, which shall also be the authority for technical education. Explaining the broad outlines of the measure, Mr. Balfour stated that the proposed education authority was the county council in counties and the borough council in county boroughs, working through committees appointed under schemes which would have to be approved by the Education Department. A majority of a committee would be appointed by the council in each case, the other members being nominated, but all would be persons experienced in education. With regard to secondary education, the provisions of the measure are practically identical with those embodied in the Bill of last year. It is proposed that county councils and borough councils should have a twopenny rate to work upon, with power to have that limit raised by provisional order if the twopenny rate should prove insufficient. Boroughs already possess a certain jurisdiction over technical education, having a penny rate to work upon, and it is not proposed to deprive any borough with a population over 10,000, or any urban district with a population over 20,000, of that jurisdiction. The councils of those boroughs and urban districts may become the absolute authority over primary education. They would also retain their existing powers over technical education, and they would become the authority for secondary education concurrently with the county council. Whether the schools in a district be voluntary or rate-erected, it is proposed that the local educational authority created by the Bill shall in future control all secular education, the cost of maintaining the schools under the local authority being thrown on the county rate. The new scheme is intended to apply to the whole country, except that London is excluded from the operation of the Bill, and it is also proposed that the adoption of the elementary education portion of the measure shall be optional in other parts of the country. In Mr. Balfour's opinion the Bill should largely decentralise education, and attract to the work of education experienced men who will not face School Board elections.

The Vaseline Trade-Mark was directed to be removed from the register in February, 1901, by order of Mr. Justice Buckley, on the ground that the word "vaseline," which was registered as an old mark in 1877, was then descriptive of petroleum jelly purified by filtration through animal charcoal, and did not indicate the manufacture of a particular firm. The order of Mr. Justice Buckley was appealed against by the Chesebrough Manufacturing Company, the case coming before Lords Justices Vaughan Williams, Stirling, and Cozens-Hardy on March 24, and the appeal was then allowed, Lords Justices Vaughan Williams and Stirling being of opinion that the word "vaseline," being an old mark which had been in use for six years before March 8, 1877, was properly placed on the register in 1877, and should not be removed, as directed by Mr. Justice Buckley. Lord Justice Stirling, with whose judgment Lord Justice Vaughan Williams expressed agreement, pointed out that the substance invented by Mr. Chesebrough was never in England known solely by the name of "vaseline"; on the contrary, it was known under many names, and the evidence was that the name "vaseline" has in England always been confined to the inventor's manufacture. In his judgment, therefore, the appeal should be allowed, and an order made refusing the application to rectify the register. But he thought the order as to costs in the Court below ought not to be disturbed, and that there ought to be no costs of the appeal. Lord Justice Cozens-Hardy dissented, and explained why he thought the judgment of Mr. Justice Buckley was correct, but the majority was against him, and the trade mark "vaseline" accordingly remains on the register.

The Poisoning Fatalities reported this week are fairly numerous, but there is nothing in any of the fourteen cases to call for special comment. They may be tabulated usefully as follows: —

Poison.	Accident.	Suicide.
Ammonia	2	—
Carbolic Acid	—	1
Chlorodyne	1	—
Chloroform	2	—
Hydrochloric Acid	1	—
Laudanum	1	1
Morphine	—	1
Opium	1	—
Salt of Lemons	—	1
Strychnine	1	1

Solution of ammonia caused the death of two women—one at Eastbrook, Pitminster; the other at Ashton-under-Lyne—one of whom appears to have mistaken it for spirit, while the other took it when suffering from the effects of excessive drinking. The two chloroform cases were due to the use of the drug as an anæsthetic. An overdose of chlorodyne was accidentally taken by a Rusholme lady who had been suffering from sleeplessness, following influenza. Similarly a Coventry lady died from the effects of an overdose of strychnine, injected to relieve neuralgic pains. The hydrochloric acid was taken by a working man at Hockley, in mistake for medicine. In one laudanum case the evidence showed that a journeyman printer had taken half an ounce of laudanum to make him sleep, and that death subsequently ensued from asphyxia. Laudanum was also taken, apparently with suicidal intent, by an elderly woman living at Cardiff. An overdose of opium, taken under a doctor's orders to relieve pain, caused the death of Joseph Eckersley, of Oldham, who is described as a "chemist," though the name does not appear in the Register of Chemists and Druggists for 1902. A Cardiff schoolmaster, who had been suffering from depression, took forty-four grains of morphine, with fatal results. The evidence showed that he had obtained an ounce of morphine by post from Messrs. Ferris and Co., of Bristol. A labourer's wife at Horsham, who had been afflicted with neuralgia, died from poisoning by strychnine, but there was no evidence to show how she had obtained or taken it, though it appeared to be a case of suicide. The carbolic acid and salt of lemons were taken by young women, while temporarily insane.

Natural and Laudable Objection to the practice of running down the Pharmaceutical Society which is sometimes indulged in even by its members, is no more than was to be expected from Mr. Peter Boa; but, in speaking of the Society as the members' "own society," at the supper in Edinburgh last week, that proprietary form of expression might be thought to weaken the force of his objection. Since every man is supposed to have the right to beat his own wife, the same principle might be held applicable to the Society. It would be more appropriate, therefore, to enforce the objection by reference to the fact that the members are the constituent parts of the Society, ultimately responsible for any defects or deficiencies it may be chargeable with.

The Importance of Purity of medicinal agents, and of their being systematically tested by pharmacists, receives a striking illustration in the circumstance that Dr. Reynolds, of Manchester, has found arsenic present in the ferrum redactum of the B.P. sometimes to the extent of 1 per cent. The *Lancet*, in reporting the observation, suggests that many practitioners who have found the administration of iron in that form very advantageous in cases of anæmia, may have unconsciously been indebted to the arsenical impurity for the beneficial result of their treatment, since with every grain of reduced iron there would be administered the equivalent of a minim of liquor arsenicalis.

The Royal Commission on Arsenical Poisoning has held several private meetings of late, with the especial object of investigating the cause of the recent arsenical poisoning epidemic in the Midlands. The proceedings are described as having been of what may be described as an administrative character, summarising what has been accomplished and considering and providing for what is yet to be done. So far as the Manchester arsenical poisoning cases are concerned, but little more remains to be done by the Commission, but investigations are being pursued into the occurrence of a number of cases at Halifax, and further meetings for the reception of evidence are to be held after Easter. Meanwhile, it is understood that the beer now being supplied throughout the country is virtually free from arsenic, while steps are being taken to trace the origin of the non-deleterious quantities of the poison occasionally met with in certain cases, the object being to eliminate those traces and enable brewers to produce absolutely pure beer on all occasions.

A Botanical Competition has been instituted by Messrs. Cassell and Co. in connection with the publication of the new and enlarged edition of their well-known 'Familiar Wild Flowers.' The competition will be conducted by Mr. F. E. Hulme, F.L.S., the author of that excellent work, and more than a hundred prizes—ranging in value from five guineas to half a crown—are offered for the best collections of wild flowers sent in. There are three divisions, the first—open to children under ten years of age—being for the best collection of twelve specimens of wild flowers; the second division—open to young people from ten to fourteen years of age—is for the best collection of fifty wild flowers, and the third—open to everyone but professional collectors and botanists—is for the best collection of one hundred specimens. All the flowers in the collections submitted must have been figured and described in Cassell's 'Familiar Wild Flowers,' and the conditions of the competition are published in the parts of that work now being issued.

Laudanum Drinking Extraordinary is the subject of a note in the *Glasgow Evening News*, the writer of which states that history records an authentic tale of a Glasgow glazier who was in the habit of purchasing regularly two pints of laudanum at a time, at the Glasgow Apothecaries' Hall, He was accustomed to swallow four tablespoonfuls of the tincture at a draught, and tried to diminish the quantity gradually by putting pieces of putty in the glass from which he drank it, an additional piece being put in the glass every day. But just when success seemed assured an attack of rheumatism drove him back to the starting-point, and he then continued his big daily dose until his death. The *Glasgow Evening News* pointed out recently that the laudanum-drinking habit is much too prevalent locally, and the suggestion is now offered that the "putty remedy" might yet meet with success if given a further trial.

The Prohibition of Boric Acid in foodstuffs imported into Germany has led to the preparation by the U.S. Department of Agriculture of a list of articles in which that and other preservatives are supposed to be present, the intention being to stop the importation of such articles into the United States. It is not believed at Washington that the use of boric acid as a preservative is injurious, but the prohibition of articles containing it has been decided upon as a measure of retaliation which will apply in the case of any European country where a similar prohibition exists.

The Society of Chemical Industry, which now numbers nearly four thousand members and has a section in New York in addition to those in this country, is to have a new section formed in Canada. The headquarters will be at Toronto, but occasional meetings will be held at Montreal and elsewhere. The first chairman of the new section will be Professor W. R. Lang, of the University of Toronto, the two vice-chairmen being Professor G. P. Girdwood, of Montreal, and Mr. Harold van der Linde, of Toronto, while the committee will include chemists from all parts of the Dominion. It is also proposed to form another colonial section of the Society in Australia, with its headquarters at Sydney. The New York section, by the way, now has a membership of nine hundred, and one of its members—Professor C. F. Chandler, of Columbia University—was president of the whole Society in 1900. A British member will occupy the presidential chair at the annual meeting of the Society, to be held in New York two years hence.

"Cranks in Controversy" is what the *Pall Mall Gazette* unkindly terms the members of the Society for the Suppression of the Opium Trade in British India, in a note referring to the fact that the Society has recently memorialised the Indian Government against "largely extending the cultivation of the poppy in British India, notwithstanding numerous and express pledges on behalf of successive Governments in this country" (see *ante*, p. 114). The reply of the India Office to Sir Joseph Pease, M.P., President of the Society, points out that nothing of the kind was ever promised, but that the whole subject was referred to the Royal Commission which reported "against the policy of prohibition and against any action tending to the destruction, unasked by China, of the Indian export trade of opium." Furthermore, it is stated that no such extension of the area under poppy as the memorial complains of has taken place. So much for the controversial methods of the opium-faddists, observes the *Pall Mall Gazette*, "but your crank is ever the same. For him the means justify the end, and it is permissible to make any number of false statements in order that truth may prevail."

CHEMISTS' ASSISTANTS' ASSOCIATION.

The twenty-fourth annual dinner of this Association, which was held in the Royal Venetian Chamber, Holborn Restaurant, on Thursday, March 20, was attended by representatives of all branches of pharmacy, an excellent dinner being partaken of by about two hundred persons. The principal guests of the Association were Mr. G. T. W. Newsholme and Mr. C. B. Allen, President and Vice-President of the Pharmaceutical Society; Mr. W. F. Gulliver, President of the Western Chemists' Association; and Dr. A. P. Luff. The chair was taken by the President of the C.A.A., Mr. J. Wicliffe Peck, while the spur tables were presided over by Messrs. Coupland, Ellis, Latreille, Rogerson, Solomon, Strother, and Vallet.

The toast of "The King" having been duly honoured, Mr. H. S. Coupland proposed

The Medical Profession.

He referred to the immense benefits the medical profession has conferred upon humanity, and while appreciating the gallant deeds of British soldiers in South Africa, he pointed out that military triumphs were gained at the expense of human life and suffering, whereas the medical profession, in the fight with disease and deadly epidemics, had to exercise a skill, patience, and generalship, and sometimes to incur a risk, not inferior to those of a military commander in the field. And as science extended its boundaries, more and more stringent demands were made upon the knowledge of medical men; for the practice of medicine had to press into its service the discoveries of science, and the leaders of the profession were ever ready both to make researches for themselves and to profit by those of others. As pharmacists those present were proud to be associated with medical men in their work; they supplied them with remedies—powder and shot, so to speak—to use in their fight against disease, and they felt it an especial honour to have amongst them that night so distinguished a representative of his profession as Dr. Luff. Having been trained both in pharmacy and in medicine, Dr. Luff occupied a unique position for viewing questions which affect both callings, and in that connection he would like to refer to a growing practice among some medical men of ordering for their patients a class of proprietary articles which were advertised and sent out under fancy names, the composition not being published. He had pleasure in coupling the name of Dr. Luff with the toast.

Dr. Luff, in responding, said the President of the Pharmaceutical Society had recently stated that he liked to regard pharmacy as the handmaid of medicine; while recognising, as a member of the Pharmaceutical Society, the wickedness of differing from the head of that body, he must differ from the President in his view of the relationship between medicine and pharmacy. In his (Dr. Luff's) opinion pharmacy occupied a very much higher position than that of handmaid; the relationship was rather that of wife to husband. There was a growing practice, however, which he was afraid would tend to separate medicine and pharmacy—viz., the practice of prescribing proprietary preparations. He had directed the attention of the medical profession to the danger of a decline in the art of prescribing, and he would urge pharmacists to do all they can to stop the growth of what he regarded as a very great danger to the relationship between pharmacy and medicine.

Mr. C. E. F. Vallet, in proposing the toast of

The Pharmaceutical Society,

referred to the apathy of many registered chemists towards the Society. He thought that apathy was very largely due to their early training in pharmacy, unfavourable impressions being formed. It was said that the Society did not do enough work, and what work it did was not of the right kind. The only answer to statements of that character was to urge the necessity of every registered chemist joining the Society, and by their votes and influence helping to improve the present state of affairs. He thought the Society would do much to strengthen its position if it took in hand the apprenticeship question, and tried to devise some scheme whereby apprentices might be induced to take an interest in, and acquire a love for, pharmacy. He coupled with the toast the name of Mr. Newsholme, President of the Pharmaceutical Society.

Mr. Newsholme, in responding to the toast, regretted that, as President of the Pharmaceutical Society, he did not represent a much larger proportion of the sixteen thousand registered chemists than he does at present. He pointed out that the lack of support on the part of those who do not join the Society greatly handicaps the Council in its endeavours to bring about a better state of things in pharmacy. When the Privy Council and other departments of State were approached, the fact that the Society only represented some six thousand out of sixteen thousand persons told against the Society. It was his ambition to see the whole of the registered chemists of Great Britain members of the Pharmaceutical Society, and there was no reason why that should not be. If the various reforms which were considered to be required in pharmacy were to be brought about, it was necessary that the Society should be able to approach Parliament on behalf of the entire body of chemists, and not merely as representing a certain section of them. He was very glad to hear Dr. Luff speak of pharmacy as the wife of the medical profession, but if that higher position was to be maintained there would have to be more *esprit de corps* among pharmacists. In regard to the apprenticeship question, there could be no doubt that a better system of training apprentices in the art of pharmacy was desirable, and the Council was fully alive to the importance of the question. It was somewhat disgraceful that at the present time a large proportion of the candidates who come up for the examinations, while doubtless many of them capable business men, were absolutely incapable of carrying on the business of a pharmacist owing to their inefficient training in pharmacy. The division of the Minor Examination was very desirable, but there must first be a compulsory training in pharmacy, and that could not be instituted until the Society obtained further powers than it has at present. He hoped that the registered chemists of the country would think seriously on what he had said, and that an effort would be made to enable the Society to obtain the necessary powers. But he must emphasise the need of more *esprit de corps*. He was proud to be present that night as the representative of the Pharmaceutical Society and to be the guest of the Chemists' Assistants' Association of London. He had attended the annual dinner of the Association on previous occasions, and it was very gratifying to see the support given to the President of the Association. During the past few months he had been a guest at similar gatherings in other parts of the country, and he was satisfied that the more local associations there are the better it will be, not only for the Pharmaceutical Society, but for the craft itself.

Mr. F. A. Rogers then proposed the toast of

The Chemists' Assistants' Association.

referring to the past history of the Association and speaking in high terms of the work it has accomplished.

The President, in reply, thanked those present for the support accorded to the Association, and went on to remark that this session had been a very successful one, more particularly on the social side. He expressed his indebtedness to Mr. Latreille for the excellent manner in which he had organised the arrangements for that evening.

Mr. W. Garsed, in a brief but well-delivered speech, proposed

The Visitors.

Mr. W. Lamond Howie responded, and after the singing of "Auld Lang Syne" the proceedings terminated.

A good musical programme was contributed by members of the Association and friends.

LIVERPOOL CHEMISTS' ASSOCIATION.

At a meeting of this Association, held on Thursday, March 20, Mr. H. Wyatt, Jun., President, in the chair,

Mr. A. C. Abraham, F.C.S., F.I.C., read a paper on

Pharmacopœia Revision,

which is printed at page 255.

The President, in opening the discussion which followed, said the suggestions as to the amendment of the instructions for making the alkaloidal solutions, the simplification of the syrup of orange flower water, and the remarks upon the ointments were just what they would like to see adopted in their Pharmacopœia.

Mr. T. S. Wokes thought that the extent of demand for a drug should be taken into account when its inclusion in the Pharmacopœia was being decided upon. Touching upon the remark that oil of aniseed was not soluble in water, he should like further information upon the point, as even after filtration he had found aniseed water made from the oil had a distinct flavour. He proposed a very hearty vote of thanks to Mr. A. C. Abraham for his useful paper.

Mr. J. Hornblower, in seconding the vote of thanks, agreed with Mr. Abraham as to the senseless deletion of tinc. zingib. fort. from the Pharmacopœia, saying that in the wholesale trade the amount of that tincture handled was simply surprising. Again, the simple tincture of valerian should have been retained. He should like to have the experience of members as to the keeping qualities of tincture of opium as now made with a weaker spirit. Was there any extra deposit on standing, and did the alkaloidal content of the tincture suffer at all from this cause? He was at one with Mr. Abraham and the President that the carbolic ointment should never have been made with a paraffin base.

Mr. Cowley complimented the author of the paper on the pithy style of his comments, and on the practical outcome of his experience. Such papers were what associations like theirs wanted. The distilled waters made from the drug were always preferable to those even distilled from the essential oils, for essential oils never had the true flavour of the plant or drug from which they were derived. In making syrup of lactophosphate of lime he preferred dissolving the calcium lactate in the phosphoric acid when there was never any precipitate. As for standardisation of drugs, there was not the least use of devising the excessively elaborate methods adopted in the Pharmacopœia, for pharmacists as a body would not be bothered with applying them, but would buy their galenicals ready standardised—a state of things not to be desired. There was such a thing as too much standardisation.

Mr. P. H. Marsden found, as Mr. Abraham had said, that the waters of peppermint, spearmint, aniseed, and dill varied largely when made with the essential oils without distilling. In his hands tincture of opium had proved very stable and satisfactory.

Mr. Abraham, in replying to the vote of thanks and the remarks made on his paper, said that the reason that aniseed water made by solution and filtration had a slight flavour was that the oil passed through the filter, but that in cold weather it was soon deposited, leaving the water practically tasteless. Many waters could be made as suggested in the Addendum, but the calcium phosphate was wholly unnecessary. The syrup of squills made by boiling had a very different action to that made by cold percolation, owing perhaps to the action of heat on the glucosidic principle of the squill. He could assure Mr. Hornblower that tincture of opium was a satisfactory preparation, and the deposit from it was extremely slight.

The Hon. Secretary, Mr. T. H. Wardleworth, then read the following note by Mr. Edwin Dowzard, F.C.S., on the

Refractive Index of Cod Liver Oil.

Probably the best test for the genuineness of cod liver oil is the determination of the refractive index. Several years ago I commented on this fact (*P.J.*, [4], **6**, No. 1458); since then a large number of samples have been examined, and the conclusions arrived at in the paper alluded to have been confirmed. The very peculiar fact has come to light that Norwegian oil has a higher refractive index than Newfoundland oil.

The following table illustrates this. The oleo-refractometer was used for the determination of the refraction figure, the standard oil was standardised against glycerin, as described in the *C. and D.* (V. 57, No. 1044:—

Newfoundland oil.		Norwegian oil.	
Number of samples.	Refractive figure 22° C.	Number of samples.	Refractive figure 22° C.
3	+42·0	6	+44·0
2	+42·5	4	+44·5
4	+43·0	12	+45·0
4	+43·5	2	+45·5
1	+44·0	6	+46·0
1	+44·5	3	+47·0
		1	+48·0
Total 15		Total 34	

It will be seen that the refractive figure of Newfoundland oil varies between + 42 and + 44·5, while that of Norwegian oil varies between + 44 and + 48. The difference may be of use to distinguish the two oils. For instance, a genuine cod liver oil having a higher refractive figure than + 44·5 will probably be Norwegian; if it is over + 45 the sample is almost certain to be Norwegian. If the figure be below + 44 the probability is that the oil is Newfoundland; if below + 43·5 it is almost certain to be Newfoundland.

A vote of thanks was awarded the author, on the proposition of the President, seconded by Mr. A. C. Abraham.

FORFARSHIRE CHEMISTS' ASSOCIATION.

At a meeting in Dundee, on the 19th inst., Mr. Kermath, St. Andrews, presiding, Mr. C. Kerr proposed that the Association should place on record its sense of the loss sustained by the death of Mr. Martindale, who had been to the present generation of pharmacists and the medical profession a monitor and guide, as Christison was to the past. That was seconded by Mr. A. B. Anderson, and carried.

Mr. Tocher then expounded his views concerning

University Education for Pharmacists (see page 257).

In the subsequent discussion Mr. Tocher was complimented on his lucid statement, and a hope was expressed that his anticipations of better times might be realised.

Mr. Jack, Arbroath, suggested that a committee should be appointed to consider the subject of nostrum advertisements with a view to educating the public as to the proper value of the claims put forward to cure all diseases.

A vote of thanks to Mr. Tocher was carried, and, on the motion of the Chairman, a resolution was passed that the Association approves of the principle of securing for pharmaceutical students a University education and the institution of a science degree in the universities.

In returning thanks, Mr. Tocher spoke of University education for the Minor qualification as being the great need for raising the status of the craft.

On the motion of Mr. Kermath, it was resolved to suggest that candidates possessing leaving certificates be allowed to complete the Preliminary Examination by passing the remainder of the subjects under any of the examining bodies recognised by the Society—always provided the six subjects have been passed at not more than two examinations.

Before the conclusion of the meeting, Bailie Doig expressed a hope that some steps would be taken by the chemists in Dundee to secure a half holiday in the same way as all other shopkeepers in the city, and a committee was appointed for that purpose.

GLASGOW PHARMACEUTICAL ASSOCIATION.

At a meeting of the Glasgow and West of Scotland Pharmaceutical Association, held on Thursday, March 20, Mr. Currie, President, in the chair,

Mr. J. F. Tocher read a paper on

The Scotch Universities and Pharmaceutical Education.
in which he repeated the arguments advanced in the paper previously read by him at Dundee (see p. 257). At the conclusion of the paper,

Mr. Currie invited free expression of opinion, at the same time intimating that what was said was not to be reported.

Mr. J. P. Gilmour suggested that the conference should be open, as he thought Mr. Tocher's scheme had suffered through the proceedings which had already taken place not having been reported. After conferring with Mr. Tocher, the suggestion was agreed to.

Mr. Sutherland expressed the indebtedness of the meeting to Mr. Tocher for his address. He was also to be congratulated that the Universities were in favour of the scheme. He (Mr. Sutherland) favoured it because it was voluntary and not compulsory.

Mr. J. Anderson Russell was in favour of the scheme, not because it held out a degree, but because it aimed at increased educational facilities. To give point to the discussion he moved:—

"That this meeting expresses its high appreciation of the services being rendered by Mr. Tocher, and those working with him, in promoting the scheme for pharmaceutical education for a degree in pharmacy through the Scottish Universities, and hopes the scheme will be carried into realisation."

Mr. Sutherland seconded.

Mr. Watson quite appreciated the scheme, with which he agreed generally. He did not agree with Mr. Tocher that dearth of pharmacies would be an advantage. Long hours, etc., he thought had a great effect in making apprentices scarce. From conversation he had had with medical men, many of them were disposed to give up their shops if they could get any one to take them.

Mr. Gilmour expressed admiration of Mr. Tocher's industry and "zeal according to knowledge." He thought the apprenticeship difficulty was not due to long hours, but to newer, and for the time being more attractive, callings—*e.g.*, electrical engineering—arresting attention. Things were in a transition stage, other professions were similarly affected; ultimately things would right themselves. He advocated that chemists and medical men should cultivate more friendship, and thought Mr. Tocher's suggestion that the Association should be a medium for medical men disposing of their businesses a good one. There were many good businesses in Glasgow, although the medical men might not be good business men. He looked on Mr. Tocher as the missionary of a new evangel.

Mr. Sutherland suggested that medical men should be left alone in the discussion, as the subject was Mr. Tocher's scheme.

Mr. Lothian said he could only repeat what he had said at Edinburgh. As a teacher he was not antagonistic. Thirteen years ago he had read a paper in Edinburgh in favour of education. He was not so optimistic as Mr. Tocher. Although the scheme was not Utopian, the question was, "Would the students be better taught?" He thought not. Coaches had a first-place at Oxford and Cambridge. The deficient education of apprentices was due to the fact that it was the exception for the master to be a teacher.

Mr. Maben said that from the most recent returns of the Scotch Education Department it was evident that at present there were no available students, because only 2 per cent. of those taking leaving certificates had passed the necessary preliminary examination. The Carnegie Trust is a commercial trust, and it will not dispose of its funds for the education of two or three individuals per annum.

Mr. Dunlop said that it occurred to him that the misconception of the scheme by some in England had perhaps arisen from Mr. Tocher's paper having been entitled "The Scotch Universities and Pharmaceutical Education." It could not have been otherwise designated, seeing the scheme has been formulated in view of the benefit to be derived from participation in the Carnegie Trust.

Mr. Abbott agreed with Mr. Maben as to the probable scarcity of students.

Mr. Riddell said the repeated "if, if, if" was depressing. You might as well expect to find the ultimate molecule as expect this or any scheme to have no objectors.

Mr. Currie did not think the "era of drudgery and long hours was passing away." The state of matters at present existing in some quarters was a disgrace to a professional calling. He thought the scheme excellent. Some may say, "Why trouble about it? It won't affect us. What has posterity done for us? Let posterity look after itself." The future of pharmacy depends on how it was left to posterity, and also where those now entering its ranks choose to place it—*i.e.*, retaining it as a personal possession and not by allying themselves with trusts, or combinations, or stores—neither of which, but for that, could stand for a day—sell themselves and at the same time damage the whole craft. At present they had a curriculum, only not fixed in time. They had seen that day the master mind at work, and he was sure that Mr. Tocher had spent a great deal of time and thought and money to bring his scheme the length it had reached.

The motion was then put to the meeting and carried unanimously.

Mr. Tocher having replied, and a vote of thanks having been proposed and accorded to Mr. Currie for presiding, the meeting terminated.

EDINBURGH CHEMISTS' ASSOCIATION.

The annual supper of the Edinburgh Chemists', Assistants', and Apprentices' Association was held on Friday, March 21, when the chair was taken by Mr. J. G. Sclater, President, and about eighty members and friends were present.

Mr. Donald McEwan proposed the toast of the

Pharmaceutical Society.

He said the Society was just what the individual members made it, and urged chemists to support it more fully.

Mr. Peter Boa (Chairman of the N.B. Branch Executive) responded. He said the members of the Society should stick up for it because it was their own Society. He also spoke of the importance of members exercising their voting powers, and said the Society could do more good for pharmacy if it were better supported.

Mr. D. B. Dott then proposed the toast of the

Edinburgh Chemists', Assistants', and Apprentices' Association.

He said the Association had done good work during many years, and the papers read before it had maintained a high standard.

Mr. Sclater (President) responded, after which various other toasts were proposed.

At a meeting of the Edinburgh Chemists', Assistants', and Apprentices' Association, held in the Pharmaceutical Society's House, 36, York Place, Edinburgh, on Wednesday, March 26, Mr. W. Lyon read a paper on

Research Work and Pharmaceutical Advancement.

He said: When your Secretary some months ago invited me to contribute to your sessional programme, it occurred to me that I ought to avail myself of the opportunity thus presented, and discuss with you some aspects of a problem the solution of which is of supreme importance to an association such as yours, as it also is to the wider sphere of pharmacy. No one can survey the present position of pharmacy without feeling some apprehension as to its future. Marked advancement in several ways it certainly has made during the past twenty years, but symptoms of a great danger are in evidence around us, which, if not checked, may set the clock of progress in backward motion, a result which would be not only disastrous to the best interests of pharmacy, but also a slur upon the nation to which we have the honour, and it is no trivial honour, to belong. The great improvement in pharmaceutical education which has taken place during the past decade has not in one respect borne the fruit expected of it. The average pharmacist of the present day is unquestionably a much better pharmaceutically educated individual than that of thirty years ago, and being so, are we not justified in expecting from him a larger contribution towards the upkeep and further advancement of the scientific side of pharmacy? Though he may conduct his business with more care and skill than was done formerly, though he may impress the public with a sense of his superiority over his predecessor, though he may have all the sciences relating to pharmacy at his finger ends, if he only utilises these advantages in order to enhance his own business position does he therein do all that is required or expected of him as a pharmacist? Has he no duty towards the body corporate, has he no call upon him to contribute something to the advancement of the scientific side of his profession?

It is to these questions and their bearing upon pharmaceutical advancement that I would like to direct your attention this evening. To some it may seem but a waste of time on your part, and misdirected zeal, or something worse, on mine, to dwell, even for a moment, upon this particular phase of pharmacy life. There are many, unfortunately too many, who consider the care and fostering of their business to be their sole duty towards pharmacy. I readily grant that this is, and always will be, the primary object of a pharmacist, and if in pursuit of this he aims at, and attains, a higher standard of proficiency and public utility, he will have a certain influence for good in regard to the status of pharmacy; but if all of us are to pursue the same selfish policy, we may as well bury the Pharmaceutical Society at once, and give up all our ideas of continuing the labours of those high-minded and energetic pharmacists of the past, who, in spite of disheartening circumstances, succeeded in raising out of a chaos a representative body which has earned for itself an honourable position in the educational and scientific worlds.

There are other pharmacists who, whilst according research work and pharmaceutical advancement their sympathy and silent support, yet owing to natural diffidence or unnecessary depreciation of their power to help, afford it no active assistance. Sympathy with an excelsior policy is commendable, but as in the religious, so also in the pharmaceutical sphere—"faith without works is dead." Appreciation is no doubt a stimulating tonic to those who labour for the advancement of any policy or any calling, but a little emulation and honest endeavour to take an active place in the ranks of the workers have an infinitely more telling effect. To you and to all others who are still endowed with the energy of youthful enthusiasm I would appeal for an earnest consideration of this subject, and for your active assistance in fostering and spreading this desire for improvement. I am reluctant to believe that the spirit of research and the desire for knowledge are entirely dead amongst the young men of pharmacy, the considerable falling off in the number of papers of pharmaceutical import noticeable during recent years being attributable mainly to other causes. There are, as already remarked, many pharmacists who take little or no interest in the scientific side of pharmacy; consequently those in their employment get no encouragement or opportunity to make researches or to write papers. In sorrow be it said, for it is alas too true, the mind of the average pharmacist rarely rises above business considerations. Regrettable as this is, there is no use in shutting our eyes to it. Rather let us look it boldly in the face and make an endeavour to bring about a better condition of things. The principal causes which tell against research work and self-improvement are lack of proper training, lack of time, lack of materials and conveniences, lack of direction and lack of stimulation. The first lack, viz., proper training, has been admitted and dilated upon over and over again, so it may be omitted on this occasion, its importance being evident to all.

Let us, however, briefly consider the other four lacks, and endeavour to ascertain if there is a possible way out of this wood of impediments. It is scarcely necessary to point out how much the long hours of business presently in force militate against research work and self-improvement; until those are shortened advancement will always be handicapped. But most dark clouds have their silvery lining, and even long business hours might be made to a limited extent an ally of research and improvement were the environments of the would-be worker propitious. The longer the business hours the more chance there is of intervals of leisure, and if these moments are properly utilised it is surprising how much can be done in the course of a year. Not many months ago an association discussed the apprenticeship difficulty in this hall and, in the report of the proceedings, we read that two of the speakers were emphatic in declaring that the apprentice, whilst in the shop, should be kept constantly at work. I thoroughly agree with the declaration then made, but, at the same time, it is not improbable they and I attach slightly different meanings to this word "work." Let us suppose that an apprentice puts in a nine or ten hours day at the shop. Is he to be kept constantly employed during that period in what may be called ordinary shop work, *i.e.*—dusting, putting up stock, making galenicals and nostrums, and perhaps doing a little dispensing, or is he, after having done a fair share of the shop work, to be allowed to occupy the remaining time doing work which will be more of the nature of education to him? If those two gentlemen spoke in the sense of the latter definition they are entitled to much commendation for the good example shown, but if they adhere to the former definition then I fear we cannot look upon them as giving encouragement to self-improvement or to research work. It is very satisfactory to note that at the same meeting the Chairman of the North British Branch gave voice to the opinion that the question of long hours would soon have to be faced, and when that time comes it is to be hoped it will be tackled in an earnest manner, otherwise there will be little chance of success, because strong opposition will certainly be made from some quarters. If all the assistants' associations throughout the land could only be induced to co-operate on this subject there cannot be any doubt they would give a powerful impetus to the movement for a satisfactory reduction of hours. I would like to suggest to your office bearers that before the commencement of another session they put themselves in communication with their comrade officials and endeavour to initiate a concerted movement during the coming winter. It is only by co-operation that a movement like this can be carried to success. Do not imagine that I suggest anything of the nature of coercive measures. That should be left as a last resource. What I mean is that the various associations should try and make the movement a national one, and thus strengthen the hands of those employers who are anxious and willing to ameliorate the condition of labour in pharmacies. In regard to the third "lack," even though the young pharmacist may have some spare time during his working day, unless his employer grants him facilities, it will be exceedingly difficult for him, no matter how willing he is, to do much in the way of research. A great deal of useful work, though, perhaps, not of first importance, may be done in the back shop and at little cost. As an instance of this, I need only refer to the galenicals of the Pharmacopœia, trying various methods of manufacturing these, finding out defects with an eye to subsequent improvement; applying the official identification and standardisation tests with the view of improving or simplifying; investigating the pharmacy of new remedies, so as to be in a position to meet the requirements of the prescriber.

All these things might be done in a greater or less degree, according to circumstances, by the apprentice, and for those of more experience there is abundance of higher work in the chemical and materia medica portions of the Pharmacopœia. Of course there is much in the way of research that cannot be adequately carried on during the intervals of business or with the limited conveniences of a pharmacy, but, apart from this, there is plenty of scope for minor investigations, and though the results may often be of a negative character so far as publication is concerned, the educative value to the worker will be inestimable, paving the way for work of greater usefulness at some subsequent period. With regard to more detailed and complicated investigations by those who have had some experience, I think it is a matter for regret that the splendidly equipped laboratories attached to this hall are only used for examination purposes. If the pharmacists of this city showed a desire to pursue investigations of pharmaceutical value, I am sure the Council would be very willing to do everything in its power to enable such work being carried on in an adequate manner. Unfortunately, there is as yet no evidence of such a desire, but the time may come when 36, York Place will not only be the Scottish centre for examination, but also the Scottish centre for pharmaceutical investigation. Granted that the would-be worker is generously treated by his employer, both as regards time, conveniences, and materials for research work, if there is a lack of direction as to carrying on investigations there is a great risk of his work being not only disappointing and discouraging to himself, but also of a negative and non-educative nature. To be of definite benefit to the worker and to pharmacy, investigations must not be carried on in a haphazard manner—there must be method in all he does. Many young men who are willing to be workers are often in a quandary as to what lines their investigations should take. Employers who cannot spare the necessary time, or who do not care to do such work themselves, might often give valuable aid to research by giving the youthful aspirant the benefit of their experience and knowledge, provided, of course, they have any. With regard to this part of the subject, it might be suggested to the conductors of the pharmaceutical press that they have exceptional advantages for the part of directors of research. Their position and daily work render them conversant not only with suitable subjects for research, but also with the methods to be adopted in order to arrive at a satisfactory conclusion. If they would periodically publish a list of subjects, suited to all grades, with full details about the information required and how to carry out the researches, they would render yeoman service to pharmaceutical advancement At any rate, this suggestion is worth a trial. In this way also the office bearers of the various associations might do something towards compiling a satisfactory programme for their evening meetings. By drawing up a sketch programme at the end of each winter session, giving hints and directions for each subject, they might find it an easier matter getting members to put down their names as contributors. Perhaps this plan is already in operation in your Association; but if not, I commend it to the consideration of your Committee. Little need be said regarding the fifth lack—stimulation—because in itself it is not an absolute requisite to the pursuit of improvement. Theoretically, outside stimulation ought not to be required; to the human being progress ought to be a natural desire, "the pursuit of knowledge bringing its own reward." But all are not constituted alike. To some, or maybe to the many, a little encouragement is an essential, for without it they are apt to become disheartened, and give up trying to leave the world of pharmacy "a little better than they found it." It is scarcely necessary to point out the opportunities given to those who undertake the training of apprentices how great a power they have given to them of preparing the ground and sowing the seeds of future usefulness to pharmacy. When a youth joins any trade or profession he is usually brimful of enthusiasm and eager to learn everything pertaining to it. Therein lies the master's opportunity. If he acts up to his duty and responsibility he will take care to keep alive this enthusiasm and foster the desire to learn. Like the clergyman in "The Deserted Village," he will not only point out but lead the way. Personal interest in the apprentice, systematic teaching and training of him in everything that pertains to his work, encouraging him to read and practically study the sciences upon which it stands, will make him not only of greater assistance in the everyday work of the business, but will encourage him to make himself fully equipped to do his part in sustaining and advancing the position of pharmacy in the worlds of science and commerce. We are sometimes told, usually by those who are "laggards in the race," that scientific and mental training is but wasted energy so long as pharmacy continues to comprise much that is merely manual labour and ordinary trafficking in merchandise.

This fallacy, for fallacy undoubtedly it is, though it may not be apparent to those who give it utterance, has already done considerable damage to the advancement of pharmacy, and may do much more if the general body of pharmacists do not perceive the *cul-de-sac* it leads to. Let anyone survey the present position of the industries of this or any other country and compare them with the circumstances ruling twenty or thirty years ago, and what will be found? Just this, that nowadays more and more technical skill and scientific application are required in order to keep these industries alive. Is pharmacy then, to be the one great exception to this universal evolution? Will it be able to progress or even maintain its position by following the methods ruling thirty years ago? It certainly will not. Further, let me ask you this question: Why are those firms who manufacture such enormous quantities of medicinal specialties able to find in every other pharmacy an outlet for the produce of their factories? The answer is simple. The pharmacist's neglect was their opportunity. Those manufacturers perceived the change that was taking place in every industry. They saw clearly that progress was the order of the day, and applied themselves assiduously to improving the methods of manufacture, investigating new drugs, and supplying medicinal preparations in a form that would find ready acceptance alike by prescriber and by consumer. Had the majority of pharmacists been alive to their interests they could have kept the production of many of those preparations to themselves. But instead of utilising the knowledge they gained during their student days as a basis for enabling them to investigate and find out for themselves the most suitable and acceptable forms of supplying drugs, they merely resigned themselves to the subordinate position of being retailers of the produce of those wide-awake and energetic manufacturers, little reckoning that by doing so they were allowing a net to be woven mesh by mesh around them from which they will ultimately find it impossible to free themselves, and thus bereft of all claim to be considered skilled compounders of medicines, they will become but slaves in the world of industry, instead of being, as they ought to be, pioneers of progress and improvement. That is the position in which those "take it easy" pharmacists will land themselves by following the *otium sine dignitate* pathway. Think not that because a pharmacist is well grounded in science and has a liking for investigations that he will necessarily be an inferior business man. You have but to make a round of the leading pharmacies throughout the land to find out that the heads of all these establishments are not only shrewd business men, but learned in the sciences also, and if you care to inquire further, you will find that their business has been built up and maintained in a leading position only by assiduous attention, technical skill, and scientific application. In spite of all that has been said against pharmacy as a calling, the never-ending business hours, fierce competition, diminishing profits, etc., etc., there is not the slightest doubt that the shrewd, scientific pharmacist still finds fair remuneration, and those who are continually complaining and crying for protection would find it more profitable to change their tactics and endeavour to imitate the business methods of those persevering scientific pharmacists. The Pharmaceutical Council has done much in the way of stimulating research work and encouraging self-improvement, but its powers in this direction are, of course, somewhat restricted.

Beyond showing in a limited way how these may be done so as to be of benefit to the worker and to pharmacy, it can only appeal to the members of the profession to do similarly according as their circumstances permit. Though the Research Laboratory established some years has not perhaps done all that was expected of it, still it has produced some good results, and will, I doubt not, continue to do so; and the Society's School, much criticised and disparaged as it is in some quarters, is deserving of praise, inasmuch as the students attending it are encouraged to look upon the Minor and Major Examinations as but stages in their educational careers and not as the end of their scientific studies. In saying this I do not wish to cast any reflection upon the other schools of pharmacy. They have done, and are doing, much good work, but no matter how willing the teachers of these institutions are to engender in their pupils a desire to go further with their studies, the fact must be faced that the sole aim of the majority of the students who attend these schools is to pass the Minor Examination in the least possible time and at the least possible expense, and thus handicapped, how can we expect those teachers to achieve better after results than they do at present? When, as one of them admitted in this hall a short time ago, they have to teach their students almost everything embraced in the Minor Syllabus within the short space of six months, how can we expect these students, except in a few instances, to take an interest in the scientific side of pharmacy after passing the Minor Examination under such conditions, when they did not take any interest in it before attending a pharmacy school? The fault lies not on the shoulders of the teachers; it lies entirely with the students themselves and those who had the training of them during their apprenticeship. Unless a youth takes an interest in scientific pharmacy during his apprentice and junior assistant period, there is not much hope of him thereafter developing more than a passing interest in it, because he is then past his most impressionable age. It is upon the efforts of those who are presently the young men of pharmacy that its future depends. If they apply themselves with energy and zeal to the task, they need have no doubt about advancing its position and of making a good living out of it. That, however, can only be obtained by unremitting attention, technical and scientific ability, and continuous alertness towards improvement, therefore they must be prepared to put their shoulders to the wheel in a whole-hearted manner. Moreover, let them not be discouraged, though their earlier efforts may seem trifling and insignificant, these have a value in themselves, and will lead to greater results afterwards if the workers will only take courage and go higher step by step. More brilliant investigations may overshadow theirs for the time being, but let these be an incentive towards a position of greater utility and not a discouragement. Let them make the best of their opportunities, be they great or small; for no matter how little their contribution may be, they will have the satisfaction of having done something towards improving the position of their calling and given encouragement to others to follow in their footsteps. It is regrettable that some of the energy which is so conspicuously shown when trade interests and pharmaceutical politics are under discussion cannot be deviated into the pathway of research. Week by week the pharmaceutical press shows evidence of zeal and ability on the part of pharmacists which, if applied to research work, would produce great results. It must never be forgotten that our calling is of a dual nature, that our interests are not merely those of ordinary traders, that the welfare of pharmacy is much more dependent upon the technical and scientific ability of its followers than upon political or trade circumstances. That being so, it cannot be too strongly impressed upon the young men of pharmacy that, whilst it is but right and proper they should take an interest in political and trade questions affecting their business, it is much more incumbent on them to take an earnest interest in the scientific side of pharmacy, and particularly let that interest be inspired by the spirit of those heroes of ancient Rome immortalised by the great Macaulay—

> "Then none was for a party,
> Then all were for the State."

NORTHAMPTON CHEMISTS' ASSOCIATION.

The annual dinner of the Northampton Chemists' Association was held on Thursday, March 20, at the Black Boy Hotel, Northampton. Mr. W. **McKinnell**, President of the Association, presided over a company numbering nearly thirty. Mr. W. D. Mayger was Vice-Chairman, and the guests of the Association were the Mayor of Northampton (Councillor F. G. Adnitt, J.P.), Councillor James Barry, J.P., Dr. A. C. Clifton, Assistant-Commissioner T. H. Woolston (St. John Ambulance Brigade), the three last-named of whom were formerly chemists in Northampton; Mr. T. Oldham, Towcester; Mr. C. Bond Smith, Potton; Mr. Robinson, Wellingborough; and Mr. F. W. Ashton (Idris and Co.).

The proceedings were pleasingly successful. Mr. **Barry** proposed "Success to the Pharmaceutical Society and the Local Association." The Pharmaceutical Society, he said, had accomplished a great work. It had raised the status of the chemist, and, so far as its influence went, it ensured that qualified persons only should be entrusted with the important duty of dispensing. Nothing could be better for local chemists than to meet on friendly terms and talk over matters connected with the business.

Mr. **Oldham**, a chemist from the county, expressed his delight at meeting the Northampton chemists, and said that he hoped the Pharmaceutical Society would do still more for the chemist, and, after a sympathetic reference to the tragic death of Mr. Martindale, expressed a hope that a federation of the chemists of the county would be realised before long.

Mr. **North** (Northampton) also replied.

The **Vice-Chairman** proposed "The Mayor," and His Worship, in reply, regretted the absence of Mr. Armitt through illness, and referred with pleasure to the honour paid by the city of Oxford to his old friend, Mr. G. C. Druce, formerly a chemist in Northampton, by electing him Mayor of the city for last year. The **Mayor** then proposed "The President," and paid a high tribute to the personal qualities and business capacity of Mr. McKinnell, whom he had known for more than five-and-twenty years.

The **President**, who had a hearty reception, made a happy response, thanking the members for their invariable kindness and loyalty to him, and promising to continue to use his best efforts in the interests of the Association.

Mr. E. C. **Ashford** toasted "The Visitors," and Dr. **Clifton** and Mr. T. H. **Woolston** replied, the genial doctor relating some delightfully interesting reminiscences, and Mr. Woolston advising the young chemists of Northampton to take advantage of the facilities of technical instruction in Northampton.

The other toasts were "The Vice-President," proposed by Mr. **Barry**, and acknowledged by Mr. **Mayger**; and "The Honorary Secretary," submitted in a graceful speech by the **Chairman**, and duly acknowledged by Mr. **Cowdery**, who also read a list of letters of regret for absence which he had received from Mr. Wright, Mr. Senior, Mr. Dennis, Mr. Flinton Harris, Mr. F. Kirby, Mr. A. Armitt, Mr. John Bingley, J.P., of Northampton; Mr. G. C. Druce, of Oxford; and several chemists of the towns of Northamptonshire. Songs were sung by Mr. Donald McKinnell, Mr. T. Oldham, Mr. Gatehouse, Mr. Gallimore, Mr. Adams, and Mr. Ward. Mr. L. Warner presided at the pianoforte.

Obituary.

Baker.—On March 22, Edward Baker, Chemist and Druggist, of the firm of Baker and Son, East Gate, Chichester. Aged 84.

Burrows.—On March 18, Hampden Charles Burrows, Chemist and Druggist, Wanlip, Syston. Aged 83.

Howorth.—On March 20, James Howorth, Pharmaceutical Chemist, Bridlington. Aged 78. Mr. Howorth, who had been a member of the Pharmaceutical Society since 1846, was very highly respected in Doncaster, where he resided for over forty years, carrying on an old-established business in the Market Place, for many years in his own name and subsequently in partnership with Mr. Charles Parkin, as Howorth and Parkin. He retired from business some years ago, but kept up his connection with the Pharmaceutical Society by acting as Local Secretary, an office he held for over twenty years. Mr. Howorth took an active interest in public work, and was a member of the corporation for nearly thirty years, being an Alderman and Chairman of the Schools Committee until he retired on leaving the town for Bridlington, some two or three years ago. The funeral took place at Doncaster on Monday, March 24, the Divisional Secretary, Mr. M. H. Stiles, attending as representative of the Pharmaceutical Society.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

LITHIUM ANTIMONIDE.

Although metallic antimony and lithium unite easily when fused together, with the disengagement of much heat, the reaction is so violent that it is not possible to obtain a definite compound of the two elements by direct union. By submitting a mixture of equal quantities of potassium chloride and lithium chloride to electrolysis, employing a cathode of metallic antimony, P. Lebau has succeeded in obtaining lithium antimonide, $SbSi_3$, of a deep slate-grey colour in a definite crystalline condition, which decomposes cold water with the evolution of pure hydrogen. Its melting point is considerably higher than that of the component metals. The same electrolytic method is available for the formation of alloys of lithium with other metals. The author has thus prepared alloys of lithium with lead and with tin.—*Comptes rend.*, **134**, 231.

CELL-WALLS OF CERTAIN ALGÆ.

Lemaire has investigated the microchemical reactions of the cell-walls of various members of the Schizophyceæ, and finds considerable variation in different species. In the simplest type the cell-wall is more or less deeply stained with ruthenium red and basic aniline dyes (safranine, etc.) and is unacted upon by acid stains. This substance shows much analogy with the pectic compounds frequently met with in the walls of Phanerogams, and is found in *Gleocapsa*, *Anabœna*, *Nostoc*, etc. In the second type the wall has a more complicated structure, due to the combination of a compound acid resembling pectic acid with another organic substance having a basic reaction. This substance Lemaire calls "Schizophycose." It is insoluble in zinc chloride and weak acids and alkalies. It is stained by aniline blue and other acid aniline dyes, but not by basic aniline dyes. This composition is found in species of *Stigonema*, *Scytonema*, *Lyngbya*, etc. In the third type the cell-wall is still further complicated by the association of schizophycose with cellulose. This is met with in species of *Scytonema*, *Tolypothrix*, etc.—*Morot's Journal de Bot.*, **15**, 255.

EREPSIN; AN INTESTINAL FERMENT.

Otto Cohnheim states that the intestinal mucous membrane secretes a peculiar ferment, which transforms proteoses and peptones into soluble bodies, which are not proteoses, since they do not give the biuret reaction; they are not coagulated by heat, but are precipitated by phosphomolybdic acid. That this change is not due to the vital action of the mucous membrane is itself shown by the fact that the same result is obtained with filtered macerations of the membrane; it is, in fact, brought about by a soluble diastase secreted by the intestinal tissue. Although trypsin is present in the intestinal secretions, the results obtained are not due to that ferment, but to a new body, erepsin; trypsin will peptonise fibrin, but erepsin, although very active on proteoses and peptones, is without action on fibrin. The conclusions of Neumeister that the intestinal mucous membrane acts on the peptones in the same manner as it behaves towards fatty bodies, bringing about the formation of synthetic products is contradicted, since, if this were the case, the products would give the biuret reaction, which is not so. The whole of the peptone originally present may be precipitated by phosphomolybdic acid, in the form of a crystalline compound.—*Zeits. für Physiolog. Chem.*, through *L'Union Pharm.*, **43**, 55.

IMPURITY OF ARISTOL.

H. Cousin finds that commercial aristol is far from pure; besides containing much less than the theoretical amount of iodine, some specimens are contaminated with a notable amount of inorganic matter and contain, as well, much chlorine in organic combination. This last impurity is evidently derived from the employment of alkaline hypochlorites in the process of manufacture. Of six samples examined, the worst contained but 41·65 per cent. of dithymol diiodide, the best 87 per cent. One specimen contained 7·4 per cent. of inorganic salts, insoluble in ether, the best showed the presence of 1·4 per cent. of this impurity. All were found to contain more or less chlorine, the best 0·29 per cent., and the worst 10·38 per cent. The iodine present ranged from 19·6 to 42·58 per cent.; the theoretical amount for pure dithymol diiodide being 46·18 per cent. The chloro-compound of thymol obtained by pouring an alkaline solution of that phenol into a solution of sodium hypochlorite, which closely resembles aristol in appearance, is being examined.—*Journ. Pharm. Chim.* [6], **15**, 279.

CORYDALIS ALKALOIDS.

In summarising the results of the investigation of the alkaloids of the root of *Corydalis cava*, J. Gadamer calls attention to the analogy between the bases isolated from that source and the alkaloids of opium. Although protopine has not yet been isolated from the root of corydalis, it has been stated by Battandier to occur in the herb; its occurrence in the root may either have been overlooked in the presence of so many other bases, or its place may be taken by corycavamine, $C_{21}H_{23}NO_5$, which may prove to be homologous to protopine, $C_{20}H_{19}NO_5$. In all, no less than eleven bases have been found in corydalis roots. These are, corydaline, $C_{22}H_{27}NO_4$, m.p., 134·5° C.; corybulbine, $C_{21}H_{25}NO_4$, m.p., 238°-239° C.; corycavine, $C_{23}H_{23}NO_6$, m.p., 216°-217° C.; bulbocapnine, $C_{19}H_{19}NO_4$, m.p., 199° C.; corytuberine, $C_{19}H_{25}NO_4$, melting above 200° C.; corydine, an amorphous base, m.p., 65°-75°; isocorybulbine, a weak base; corycavamine, more strongly basic; and two amorphous bases, one of which gives a crystalline the other an amorphous hydrochloride, and a base melting at 135° C., which is not identical with corydaline.—*Archiv.*, **240**, 19.

DEVELOPMENT OF PLANT HAIRS.

Hirsch has investigated the development of the trichomes of a number of plants, for the most part familiar wild plants, with interesting results. He groups hairs according to the mode of growth into (1) those having basipetal growth, (2) those with acropetal development, and (3) those with intercalary growth. The hairs with basipetal growth he divides into (1) Those with knot-like thickenings, examples of which are met with in various Labiatæ (*e.g.*, *Lamium album*, *Origanum vulgare*, etc.), Compositæ (*e.g.*, *Helianthus annuus*, *Inula*, *Centaurea*, etc.), and various Caryophyllaceæ (*Cerastium arvense*, etc.), and Scrophulariaceæ (*Veronica officinalis*); (2) filamentous hairs, as in some Compositæ (*e.g.*, *Lactuca virosa*), and many Leguminosæ (*e.g.*, *Lupinus* and *Astragalus*); (3) hammer-shaped hairs (*Artemisia absynthium*); (4) branched trichomes (*Verbascum thapsus*); and (5) hairs with swollen terminal cells, as in many Chenopodiaceæ and Amaranthaceæ. Of hairs with acropetal development, the following types are described: (1) star-shaped hairs (*e.g.*, *Hieracium brevifolium*); (2) branched hairs (*e.g.*, *Asarum europæum*); (3) filamentous hairs (*Aristolochia clematitis*, staminal hairs of *Tradescantia virginica*, *Sonchus palustris*); and (4) club-shaped hairs (*Cichorium intybus*). Trichomes showing intercalary growth are of rare occurrence, having only been found in two species, *Polemonium cæruleum*, and *Tragopogon floccosus*.—*Fünfstück's Beitr. f. Wissenschaft Bot.*, **4**, 1.

COPPER DOUBLE SALTS. A. Miahle, who has previously described two combinations of tetracupric hydrate with aqueous solutions of metallic chlorides, bromides, and sulphates, describes a series of similar combinations with metallic nitrates. These are found, with the exception of cadmium, to give double salts isomorphous with cupric tetranitrate, $Cu(NO_3)_2,3CuO,3H_2O$. The zinc copper salt, $Zn(NO_3)_2 3CuO,3H_2O$, occurs as minute hexagonal lamellæ, when a fairly concentrated solution of zinc nitrate is left in contact with tetracupric hydrate. The cobalt salt, $Co(NO_3)_2,3CuO,3H_2O$, forms a violet tinted precipitate composed of minute stellate crystals. The nickel salt, $Ni(NO_3)_2,3CuO,3H_2O$, forms hexagonal crystals grouped to form six-branched stars. Manganese nitrate gives the salt, $Mn(NO_3)_2,3CuO,3H_2O$, also in hexagonal lamellæ. The cadmium compound differs from the preceding, having the formula, $Cd(NO_3)_2,CuO,5H_2O$. Mercuric nitrate forms the salt, $Hg(NO_3)_2HgO,H_2O$, crystallising sometimes in clinorhombic lamellæ, and sometimes in hexagonal prisms. Lead nitrate behaves similarly, not combining with copper, but giving the basic lead salt, $Pb(NO_3)_2PbO,H_2O$, isomorphous with the mercury salt.—*Comptes rend.*, **134**, 233.

HYPNOTOXIN. P. Portier and C. Richet find that the filaments of the tentacles of members of the *Cœlenterata* secrete a peculiar toxic albuminoid, which, from its peculiar action on animals, they name hypnotoxin. It is destroyed by heating to 55° C., and is precipitated by alcohol; this precipitate, redissolved in water, retains its toxic action. Injections with this substance appear to be painless, if not anæsthetic. In fifteen to twenty minutes the inoculated animal is overcome by a profound sleep, and is quite indifferent to its surroundings, being in a semi-comatose condition. The action of the heart is accelerated, sensibility is almost wholly abolished, the gait staggering, the eyes half-closed, and every spontaneous physical action weakened; the temperature at the same time falling 2 or 3 degrees. With larger doses the effects are more pronounced, and terminate in death, which results from paralysis of the respiratory organs, preceded by spasmodic breathing. The same effects were observed with pigeons, ducks, frogs, fish, and guinea-pigs. It is evident that the action of this poison enables the *Cœlenterata* to stupefy their prey, and, in this way, to capture animals much more active and muscularly powerful than themselves.—*Comptes rend.*, **134**, 247.

OCHNA ALBO-SERRATA. The bark of this tree, a native of German East Africa, has been examined by Dr. M. Greshoff. It is yellow, and has an astringent, somewhat acid, but not bitter taste. The presence of berberine was suspected, but it was found to contain no alkaloid. The yellow colouring matter, obtained by exhausting the bark with an alkaline solution, and precipitation with hydrochloric acid, or by exhausting the bark with alcohol after removing all matter soluble in water, is an orange yellow amorphous resin, easily soluble in alcohol, amyl alcohol, ether, or glacial acetic acid and alkaline solutions, but only slightly in boiling water. It appears to belong to the class of phlobaphen dye-stuffs formed by oxidation of tannin present in the bark. Its formula, so far as could be ascertained from several experiments is $C_{14}H_{11}O_4$ or $C_{14}H_{13}O_5$. In a similar yellow bark from the same district supposed to be derived from a species of *Zanthoxylon*, but differing in having the colouring matter in layers in the cortical parenchyma alternating with uncoloured layers, whereas in the ochna bark it forms a thick outer crust, the colour was also found to be due to a phlobaphen or oxidised tannin, having apparently the composition $C_{20}H_{20}O_9$.—*Notizbl. Bot. Gart., Berlin*, No. 22, p. 41-43.

THE ASSAY OF SODIUM BENZOATE.

BY F. H. ALCOCK.

If 0·5 gramme of sodium benzoate and 0·5 gramme of ammonium chloride be dissolved in 10 C.c. of distilled water and evaporated to dryness, the loss of weighed substances is very small—about 0·008 gramme. If the mixed solids be now gently ignited, dense fumes are given off, and if a pane of glass be placed over the heated porcelain dish a mass of crystals is condensed and will be found to contain benzoic acid and be quite free from ammonia. Dissociation takes place. The residue in the dish is free from carbon according to the purity of the solids used, and consists of sodium chloride only, as will be apparent by the cubic crystals obtained if water be added to the cooled mass and the solution evaporated slowly in a flat-bottomed glass dish over the water-bath. The weight of these crystals when perfectly dried was found to be 0·197 gramme, and they were free from alkaline substances as indicated by litmus paper. Subsequent titration of the residual sodium chloride dissolved in 10 C.c. of water with N/10 standard solution of silver nitrate, using neutral potassium chromate as indicator, required 33·8 C.c. for complete precipitation, corresponding to a percentage of sodium chloride of 39·25 $\left(\frac{5{\cdot}807 \times 33{\cdot}8 \times 100}{1000 \times {\cdot}5}\right)$ or of sodium benzoate equal to 96·67 $\left(\frac{14{\cdot}301 \times 33{\cdot}8 \times 100}{1000 \times {\cdot}5}\right)$ which nearly agrees with the standard demanded by the Pharmacopœia, this being from 97·24 $\left(\frac{143{\cdot}01 \times 6{\cdot}8 \times 100}{1000}\right)$ to 98·67 $\left(\frac{143{\cdot}01 \times 6{\cdot}9 \times 100}{1000}\right)$ per cent. The official requirements have not in my experiments been attained, although many trials with different specimens have been made. The test adopted by the B.P. is that of ignition and subsequent titration of the residual sodium carbonate with normal standard solution of sulphuric acid, and like many of this class is not entirely satisfactory, and, indeed, in the case of cream of tartar, has been abandoned for the acidimetric plan. The above process has been tried by the inexperienced, and concordant results have been obtained. Quantities as low as 0·1 gramme of each have been used with success. It will be seen by calculation from the appended equation representing the probable change that the amount of ammonium chloride suggested in the above experiments is in excess of the quantity theoretically required:—

$$\underset{(143{\cdot}01)}{C_6H_5{\cdot}COONa} + \underset{(53{\cdot}13)}{NH_4Cl} = C_6H_5{\cdot}COOH + \underset{(58{\cdot}07)}{NaCl} + NH_3$$

NOTE ON THE PHARMACY OF BISMUTH SALICYLATE.

BY W. LYON.

When this substance is prescribed in mixture form, its suspension by the aid of mucilage of tragacanth sometimes leads to awkward results. Unless a smaller quantity of tragacanth is used than would be necessary if it were bismuth carbonate, the mixture soon becomes semi-solid, and, even after thorough shaking, unpourable from the bottle. On my attention being drawn to this peculiarity of bismuth salicylate I was inclined to attribute it to disassociation of the salt, and that the thickening of the mixture was caused by the bulkiness of salicylic acid as compared with its bismuth salt. Several mixtures were prepared, allowed to thicken, and then shaken with ether to dissolve out the salicylic acid. On evaporating the ether portions the residues gave only faint reactions with ferric chloride, very little different in intensity from the reaction obtained by shaking dry bismuth salicylate with ether. It was therefore highly improbable that the thickening was due to the liberation of salicylic acid, and it had to be attributed to the gelatinising effect of bismuth salicylate upon tragacanth mucilage. That being so, it became necessary to find a preventive, otherwise tragacanth mucilage would have to be abandoned as a suspender. The following table shows the results of the experiments. It will be seen that glycerin alone is insufficient, and glycerin and alcohol successful only to a certain extent. Increase of the salicylate beyond a certain point necessitates a reduction in the quantity of tragacanth. Neither of the other three salicylates experimented with showed similar gelatinising action upon the tragacanth, nor did the addition of salicylic acid to the sodium salicylate mixture have any apparent effect, so this particular action of the bismuth salt is evidently peculiar to itself and not shared by other members of the group. Mixtures 3 and 6 may, however, be depended upon by dispensers, so the difficulty can be easi.- prevented.

Mixtures.

Ingredients.	1.	2.	3.	4.	5.	6.	7.	8.	9.
Bismuth Salicylate	1 dr.	1 dr.	1 dr.	1½ dr.	1½ dr.	1½ dr.			
Mucilage of Tragacanth..	1 oz.						1 oz.	1 oz.	oz.
Powdered Tragacanth......		6 gr.	6 gr.	6 gr.	6 gr.	4 gr.			
Glycerin		½ oz.	½ oz.		oz.	½ oz.			
Alcohol, 90 p.c.			3 dr.						
Tincture, 60 p.c.				1 dr.	1 dr.	1 dr.			
Spirit of Chloroform				2 dr.	2 dr.	2 dr.			
Sodium Salicylate..........							1½ dr.		
Quinine Salicylate..........									¾ dr.
Phenyl Salicylate....								1½ dr.	
Distilled Water	to3oz.	to3oz.	to3oz.	to3oz.	to3oz.	to3oz.	to3oz.	to3oz.	to1½oz.
Results.	Gelatinised; quite unpourable.	Not so thick as 1, but yet unpourable.	Quite pourable, and yet sufficiently suspended.	Much the same as 2.	Not so thick as 4, but yet unpourable.	Quite satisfactory.	Quite fluid, even the addition of salicylic acid did not cause gelatinisation.	Quite fluid.	Quite fluid.

ECGONINE.*

BY DR. O. HESSE.

Cocaine forms an addition product, $C_{17}H_{21}NO_4$, CH_3I, with methyl iodide (Einhorn), and it might also be supposed that ecgonine and methyl iodide would produce a similar combination. Lossen, as well as C. E. Merck, however, have not obtained this result, but ecgonine hydriodide; whilst W. Merck, by acting on ecgonine with benzoic anhydride and methyl iodide, obtained a substitution product of ecgonine, namely, cocaine. Gintl and Storch subsequently stated that an addition of one molecule of CH_3I to ecgonine takes place at 100°, but as they have not continued the investigation, as promised thirteen years since, and as their results were not satisfactory, Dr. O. Hesse has now published the results obtained by him some ten years ago. In fact, when ecgonine is boiled with an excess of methyl iodide in methyl alcohol with a back condenser for two hours, the addition product of ecgonine and methyl iodide is formed very readily, and on concentrating the solution an almost colourless mass separates, which crystallises from alcohol or water in colourless prisms. It has the formula $C_9H_{15}NO_3$, $CH_3I + H_2O$. The methyl chloride compound $C_9H_{15}NO_3$, $CH_3Cl + H_2O$ can be obtained from the iodide by digestion with silver chloride. It is readily soluble in water, but less so in alcohol. The base is not precipitated by soda solution, which distinguishes it from ecgonine methyl ester hydrochloride obtained by Einhorn and Klein. The gold and platinum salts have been prepared. The hydroxide $C_9H_{15}NO_3$, $CH_3OH + H_2O$, obtained by treating the chloride or iodide with silver oxide, crystallises in fine colourless prisms which readily dissolve in cold water with a neutral reaction. With benzoyl chloride it forms benzoyl ecgonine methyl chloride, which is readily soluble in water, but is not precipitated by soda solution, although saponified by it on boiling, when the benzoic acid can be detected in the usual manner. Ethyl iodide also combines with ecgonine, but less readily, forming $C_9H_{15}NO_3$, $C_2H_5I + 2H_2O$. It crystallises from alcohol in fine colourless prisms which very readily dissolve in water, but less so in alcohol. Ecgonine ethyl hydroxide, $C_9H_{15}NO_3$, $C_2H_5OH + H_2O$, obtained by digesting the iodide with silver oxide, crystallises from water in long colourless prisms. Ether removes nothing from the aqueous solution of the iodide when treated with soda, showing that the alkyl is combined in a similar manner to that in the methyl compound.

From the *Journ. für prakt. Chemie*, **65**, 91.

EXTRACT OF GENTIAN.*

BY HENRY G. GREENISH, F.I.C.

Professor of Pharmaceutics to the Pharmaceutical Society,

and

WALTER HENRY LENTON,

E. Northway Butt Scholar.

The conditions under which the E. Northway Butt Scholarship is held, as published in the Society's Calendar, although in themselves allowing considerable range, point to a desire that the subject for investigation should have a bearing more or less directly pharmaceutical in character. Considering the large number of workers now engaged in isolating and examining the constituents, active or otherwise, of various drugs, it appeared to us desirable to utilise the results obtained by these workers for the improvement of existing pharmacopœial galenicals, or for devising new ones.

It has seemed to us that of all classes of preparations in the British Pharmacopœia there is none in which the principles involved in the extraction of drugs are so neglected as they are in the class of extracts, both solid and liquid. A critical examination of the formulæ which are now official will show that old and irrational formulæ are still retained, that new ones have been introduced, the details of which are not the best that might have been adopted, that, in a word, there are but few that are not susceptible of improvement. In selecting extract of gentian on which to work we were guided partly by the fact that recent researches on the constituents of the root indicated that the official method of preparing the extract was not the best. Moreover, the process official in this country differs in principle from that official in many other countries, notably the United States, Germany, France, Austria, and Switzerland, to go no further.

We have conducted a series of experiments on the preparation of the extract, the results of which, together with a *résumé* of the literature of the subject, are embodied in the present paper.

Gentian root has been the subject of recent investigations, which have, however, been directed rather to the isolation and examination of its constituents than to a study of the methods by which the official galenical preparations are made. It will be convenient to consider the literature of the subject in two sections:—(1) the constituents and their characters, (2) investigations dealing with the pharmacy of gentian.

Constituents of Gentian.

Gentiopicrin, a bitter glucoside, was extracted by Kromayer[1] in 1862, from the fresh root. It is a crystalline substance having the formula $C_{20}H_{30}O_{2}$. It is easily soluble in water and diluted alcohol, but in absolute alcohol only when boiled. Heated with dilute acids, sulphuric, hydrochloric, or oxalic, it is hydrolysed, yielding gentiogenin and a sugar; the former is a yellowish-brown amorphous substance, which is slightly soluble in water, but easily so in alcohol. Recently Bourquelot and Hérissey[2] have prepared the glucoside and studied its properties. The fresh root, in thin slices, was dropped into boiling alcohol to destroy any ferments which might be present in it. The mixture was boiled for thirty minutes under a reflux condenser; the liquid was decanted, after the mixture had been allowed to cool, and the residue strongly pressed. The liquids were mixed, and, being slightly acid, calcium carbonate was added, and the mixture set aside for some hours. The liquid was filtered off and evaporated to the consistence of a syrup, then set aside to crystallise. The product thus obtained was purified by recrystallisation from a mixture of equal volumes of chloroform and 95 per cent. alcohol. Gentiopicrin is levo-rotatory. In 2 per cent. aqueous solution $[\alpha]_D = -196°$.

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* Communicated to the Pharmaceutical Society of Great Britain, at a meeting held in London on Tuesday, March 11, 1902.

[1] *Archiv.* [ii.], **110**, 27.

Bourquelot[3] did not succeed in isolating a ferment capable of hydrolysing gentianose from gentian root. He did, however, demonstrate the presence of such an enzyme in the green stem of *Gentiana acaulis*, and this led him to infer that a similar enzyme would be present in the green portion of *Gentiana lutea*.

Gentianose.—Gentianose was isolated in 1881 by A. Meyer,[4] who obtained it from the fresh juice by precipitation with alcohol. It has been further studied by Bourquelot and Nardin,[5] who describe its characters as follows:—Completely soluble in water, forming a colourless solution; dextrorotatory; does not reduce Fehling's solution; melting point 207-208°. On hydrolysis it reduces Fehling's solution, and becomes lævo-rotatory.

Bourquelot and Hérissey[6] have proved that gentianose is a hexotriose. On partial hydrolysis, with invertin or weak sulphuric acid, it is converted into gentiobiose and levulose,

$$\underset{}{C_{18}H_{32}O_{16}} + H_2O = \underset{\text{Gentiobiose.}}{C_{12}H_{22}O_{11}} + \underset{\text{Levulose.}}{C_6H_{12}O_6}.$$

If the hydrolysis is carried further two molecules of dextrose and one of levulose are formed, thus:—

$$C_{18}H_{32}O_{16} + 2H_2O = \underset{\text{Dextrose.}}{2(C_6H_{12}O_6)} + \underset{\text{Levulose.}}{C_6H_{12}O_6}.$$

Gentisin, or gentianic acid, has the formula $C_{14}H_{10}O_5$. It was isolated in 1821 by Henry and Caventou.[7] It was first prepared in a pure state by Trommsdorff.[8] It crystallises in long needles, which are pale yellow in colour, tasteless, and odourless. It is soluble in 5,000 parts of cold water; 455 parts of cold absolute alcohol; rather less soluble in cold alcohol 90 per cent. It is a strong acid, being capable of displacing CO_2 from carbonates.

The Gelatinous Substance of Gentian Root.—It has been observed that infusions of gentian root frequently gelatinise when kept. Denis[9] in 1836 obtained an acid from the gelatinised aqueous percolate from gentian root, which he found to be identical with the pectic acid obtained from carrots by Braconnot.

Bourquelot and Hérissey[10] draw attention to the fact that most pharmacopœias prescribe cold water for extracting gentian root, hot water removing a gelatinous substance which renders the solutions turbid and filtration difficult. They refer to the work of Poumarède and Figuier, who studied it in 1847. As a result of their experiments they concluded that the gelatinous substance does not dissolve in cold water, but does dissolve at a temperature above 70° C. They considered it, therefore, to be a substance allied to Frémy's "pectose," which at 60° C. and over becomes soluble in water, a property similar to that possessed by starch. The authors state that if the dry root is exhausted with boiling alcohol, 80 per cent., and dried, it will still yield the gelatinous substance on subsequent treatment with water. Powdered root thus treated yielded to cold water 3·25 per cent. pectose, to boiling water 5·8 per cent., and at 110° (autoclave) 7.4 per cent.

Cross and Bevan,[11] who have made a special study of cellulose and substances allied to it, give the general relationships of the pecto-celluloses and pectic group, as determined by the earlier observers, thus:—"*Pectose*, the insoluble mother substance of the group, occurs in mixture or union with the cellulose of the parenchyma of fleshy fruits and roots, *e.g.*, apples, pears, turnips, etc. This is hydrolysed by boiling dilute acids or alkalis, or by the ferment enzyme (pectase) secreted in the tissue, to *pectin* ($C_{32}H_{48}O_{32}$, Frémy), the solutions of which readily gelatinise. By continued hydrolysis (boiling water) this is further modified to parapectin, and by alkalis to metapectin and parapectic acid and pectic acid."

"The final product of hydrolysis is metapectic acid. To this acid Frémy assigned the formula $C_8H_{14}O_9$. Later investigations have established its general identity with arabic acid—a complex acid which is the main constituent of gum arabic."

"The general characteristics of the *pecto-celluloses* are these: They are resolved by boiling with dilute alkaline solutions into *cellulose* (insoluble) and soluble derivatives of the *non-cellulose* (pectin, pectic acid, metapectic acid); they are gelatinised under alkaline treatment; they are saturated compounds, not reacting with halogens, nor containing any groups immediately allied to the aromatic series."

More recent researches[12] throw little more light on the subject. According to Tollens, who has examined the pectins from various fruits and roots, acid hydrolysis (4 per cent. H_2SO_4) gave syrupy products not crystallisable—in certain cases the hydrolysis was accompanied by separation of insoluble cellulose. He concludes that carboxylic groups are present in the pectins, though probably in the anhydride, or ester, form, and that pectins may be regarded as closely related to the mucilages. Cross[13] states that the pectin of white currants is identical in composition with the typical ligno-cellulose, jute fibre, and therefore this "pectin" is a form of soluble ligno-cellulose.

Investigations Dealing with the Pharmacy.

Very little record of work done on the extract of gentian is to be found in the journals of pharmacy of recent date, and even the earlier criticisms are chiefly from German sources.

Geissler[14] (1836) recommended the use of the whole root in the preparation of the extract, stating that a clear liquor was obtained, and an extract which dissolved in water forming a clear solution.

Mohr[15] in 1851 published the results of some experiments on extract of gentian. He recommended cold extraction; if this was to be effected by percolation the root must be well moistened. He found that the "exhausted" root was still a little bitter, and when boiled with water gave a liquid which was cloudy, and remained so, resisting all attempts at clarification. When the clear liquor was evaporated it became cloudy and thickish long before extract consistency was reached. An insoluble body had separated out from the clear liquid. If evaporation was continued a large yield of extract resulted, which formed a cloudy solution with water. Mohr pointed out that this substance is probably contained in many extracts of gentian, and that it ought to be excluded. He was unable to arrive at any definite conclusions as to the nature of this body, but thought it could not be pectic acid, as it was dissolved from the root by cold water.

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[2] *Compt. rend.*, 1900, **131**, 113-115.
[3] *Compt. rend.*, 1898, **126**, 1045.
[4] *Zeitsch. A Phys. Chem.* [vi.], 135.
[5] *Compt. rend.*, 1898, **126**, 280, 281.
[6] *Rèpert. de Pharm.*, 1901, 181.
[7] *Journ. de Pharm.* [2], **7**, 173.
[8] *Ann. Chem. Ph.*, xxxi., 134.
[9] *Journ. de Pharm.*, **22**, 393.
[10] *Journ. de Pharm.* [6], **7**, 473.
[11] Cross and Bevan, 'Cellulose.' 1895.
[12] Cross and Bevan, 'Researches on Cellulose, 1895-1900.' 1901.
[13] *Ibid.*
[14] *Archiv.* [ii.], **5**, 68.
[15] *Archiv.* [ii.], **68**, 144.

Squibb[16] recommends that the infusion should be boiled down to three-fourths the original volume before attempting to strain. The separation of "albuminous" matters is more complete—straining easier—and the preparation in no way impaired.

Feldhaus[17] refers to Frémy's work on pectose and the products formed from it. Whose results he sums up as follows:—"Pectose is the name Frémy gave to a carbohydrate which accompanies cellulose. It is insoluble in water, but when warmed with dilute acid it is converted into pectin and dissolved. It is present in young fruits, roots, etc. Pectin is soluble in water, but is precipitated as a jelly by alcohol and also when warmed with the ferment pectase. It forms first pectosic then pectic acid." Feldhaus considers that cold water will extract both pectin and pectase from gentian root, that the pectase will convert the pectin into pectosic acid, and consequently impart gelatinous properties to it. Warm water will have the same effect. He concludes that the best way to get rid of this substance is to extract with water, concentrate, and add an equal volume of alcohol to the concentrated liquid when gelatinous flocks will be precipitated. The liquid filters rapidly, giving a clear filtrate. He thinks that prolonged digestion with hot water is better than extraction with cold water, as the pectin which is brought into solution is converted partially into insoluble substances. These he does not attempt to define.

Lendner[18] states that the fermentation which the root is often allowed to undergo during the process of drying considerably diminishes the yield of extract, owing to the conversion of the sugar into alcohol. The highest yield noted by him is 52 per cent.; the lowest 12 per cent.

Dieterich[19] finds that after several weeks' keeping the extract is no longer clear and soluble. This he considers to be due to the ferments of the root. A carefully-dried root yielded 40 per cent. of extract, a carelessly-dried and fermented root only 13 per cent.

Gateley[20] says that the process of the B.P. 1898 gives a lower yield of extract than the method formerly employed. He asks whether the alteration is intended, and suggests that its value as a pill excipient may be diminished by the elimination of some of the "gummy matter."

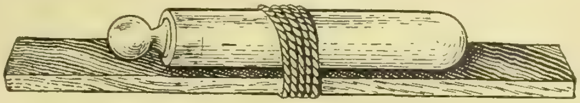
Alcock[21] makes the suggestion that in the preparation of extract of gentian it would be better to pour off the infusion first, and then boil. He does not, however, state how long the gentian should be in contact with the solvent.

(*To be concluded.*)

VICTOR MAYER'S V.D. APPARATUS.

BY F. H. ALCOCK.

Many suggestions have been made in the text-books to prevent fracture of the inner tube when the small glass bottle containing the volatile substance is allowed to fall through the orifice at the top. Amongst these may be mentioned the use of cotton wool, mercury, sand, asbestos, and the like to act as a pad or buffer at the bottom of the inner tube; but all these are not always suitable, especially in the hands of students, for unless great care and watchfulness are exercised water finds its way into the vaporising chamber at some stage of the process, and subsequent drying is a long and tedious operation. A plan is now suggested which is good, and as since its adoption there have been no trouble and no fractures, it seems desirable to communicate it to the Journal for the benefit of others: it is to tie a thin piece of wood, about two inches long, to the small-stoppered bottle in this manner.



In the fall the effect is such as not to cause any fear of fracture or non-success of the experiment, and, in addition, if the bottle is put in the tube stopper downwards the latter falls out, and with it the liquid at once, and displacement of air begins almost immediately. By former methods the stopper often stuck, and a long time was required for completion. It is hoped that some day this useful physical test may find its adoption by the B.P. authorities for such substances as chloroform *et simila.*

THE SUGAR-COATED PILL.*

BY WM. R. WARNER, JUN.

In itself a pill does not present a very weighty or complex subject for discussion or essay, and yet, what a boon the sugar-covered variety has proven to the peoples of the earth! "'Tis a bitter pill!" was spoken of ye old-time pill, and how true the saying! For several centuries all sorts, sizes, and conditions of pills and boluses, unsightly, bitter, and nauseating, were made and poked down the throats of the unwilling patients.

It was not until 1856 that the really scientifically prepared and inviting sugar-coated pill was manufactured and introduced in America by Mr. Wm. R. Warner, at that time retail apothecary, located in Philadelphia, who had spent much time and thought upon the subject, and finally gave to the world his conception and its results.

It is a well-established fact that the first results were not productive of the elegance afterwards attained, but the path was opened, and the profession had at their command, in the hands of their pharmacists, a product which was not only pleasing and palatable to their patients, no matter how nauseous the constituents of the pill, but which might be fully depended upon for expected therapeutic effects.

Such conditions did not come spontaneously; they were rather the result of the intelligent and exhaustive research and experimentation, aided by a master-mind and a thorough technical knowledge of pharmaceutical chemistry.

A sugar-coated pill, properly made, should combine the following important points:—

A careful selection of the drugs entering into its composition. *In medicina qualitas prima est.* An accurate sub-division of the medicament employed. Rapid disintegration after its administration. The use of such excipients in the preparation of the mass as will not be incompatible with its chemical construction, and finally the application of a coating which must be fully and freely soluble and yet protective of the inner pill or mass, so as to insure its continued activity and full therapeutic value, even though it be kept on hand indefinitely.

Such a pill really possesses decided advantages over the ordinary pill of the shops, extemporaneously prepared, in that the minute division of powerful chemicals is more readily and accurately reached through the processes and facilities specially invented and used for the purpose.

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[16] *Proc. Am. Pharm. Assn.* 1853.

[17] *Archiv.* [ii.], **107**, 294, 1861.

[18] *Helf. Annalen*, 1888, 64; and 1889, 41.

[19] *Helf. Annalen*, 1888, 64.

[20] *Pharmaceutical Journal*, [4], **8**, 93.

[21] *Pharmaceutical Journal*, [4], **9**, 206.

*From the *American Journal of Pharmacy.*

Thus we have the ready-prepared sugar-coated pill of to-day as properly made; and, notwithstanding the fact that the "old reliable" has been assailed by coatings of other descriptions and preparations of other shapes, we believe it is destined to outlive in average popularity any and all of its competitors.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

SCHOOL OF PHARMACY EXAMINATIONS.[*]

Session 1901-1902, Advanced Course.

CHEMISTRY AND PHYSICS.

[Only Three Chemical and Two Physical Questions are to be attempted.]

1. Describe fully, the preparation in the pure state, the properties, and the reactions of, any two of the following substances:—Phenacetin, methyl alcohol, chloral hydrate, or citric acid.

2. Sulphuric acid is often employed as a reagent; give an account of the various characteristic uses of this acid in organic chemistry.

3. Contrast the properties of the following nitrogen compounds:—(1) Pyridine, urea, acetamide, aniline; (2) nitrobenzene, ethyl nitrite.

4. An organic compound of a metal which forms colourless salt, gave on combustion the following numbers:—0·267 gram of substance gave 0·176 gram of CO_2 and 0·108 gram of H_2O, leaving behind in the combustion tube 0·223 gram of the oxide of the metal. If the substance analysed contains only carbon, hydrogen, and metal, how, by means of the periodic arrangement of the elements, could you deduce the probable atomic weight of the metal?

5. State what happens when hydrogen sulphide is allowed to react with oxygen, tartar emetic solution, alkaline solution of potassium permanganate. Also compare the chemical properties of the sulphides of potassium, tin, and carbon.

6. Explain what is meant by "interference of light." Show fully how this principle has been applied to measure the wave length of light vibrations.

7. What is a weight thermometer? State the purposes for which it is used, and the method of making an experiment. A weight thermometer contains 27·8 grams of mercury at 12° C.; when heated to 83° C., 0·3 gram of mercury is expelled; if the absolute co-efficient of expansion of mercury is 0·00018, find the co-efficient of expansion of the glass.

8. Describe carefully the construction of a sine galvanometer, and show clearly why the current is proportional to the sine of the angle of deflection.

PRACTICAL CHEMISTRY.

1. Box A contains a calcium compound. Determine
    (1) What calcium compound is present.
    (2) The amount of calcium present.
2. Analyse the mixture of three substances contained in Box B.

BOTANY.

[Only four questions to be attempted.]

1. Give some account of the general features of the group *Bicarpellatæ*, illustrating your answer by references to the most important Natural Orders of the group.

2. Describe the germination of the megaspore of *Salvinia* and the structure of the prothallium. What light does this plant throw upon the evolution of the seed?

3. What evidence is there of a nervous mechanism in plants? Illustrate your answer by reference to a selected example.

4. What do you understand by respiration? Narrate the causes of *asphyxia*, and say what metabolic changes usually accompany the early stages of this condition.

5. Give some account of the peculiarities of life and structure which characterise *Epiphytes*.

PRACTICAL BOTANY.

1. Investigate the specimen A and write a short account of its structure. Leave microscopic specimens and sketches to illustrate your memoir.

2. Refer the flowers B, C, D, E to their Natural Orders, giving your reasons.

(*A detailed description of the flowers is not required.*)

3. Comment on the specimens F, G, H.

MATERIA MEDICA.

1. Enumerate the varieties of coca leaves that find their way into European commerce. Describe them, assign them to their botanical sources, and give a brief account of the alkaloids they contain.

2. Discuss the official method for the assay of Liquid Extract of Nux Vomica.

3. State in detail the methods you would adopt to determine microscopically the presence in drugs of the following constituents:—(*a*) Fixed oil; (*b*) inulin; (*c*) mucilage; (*d*) aleurone grains.

4. By what means, qualitative or quantitative, would you endeavour to ascertain the quality of (*a*) eucalyptus oil; (*b*) cinnamon oil; (*c*) caraway oil?

PRACTICAL MATERIA MEDICA.

1. Examine, sketch and describe fully the upper epidermis of the leaf supplied. Leave a preparation mounted in glycerin.

2. Examine the crystals in the bark provided. Identify them, and state the methods you employed in testing.

3. Give your opinion, and the reasons which led to it, on the composition of the powder.

ROYAL INSTITUTION.

On Friday evening, March 21, Mr. George Matthey took the chair, and Professor Otto N. Witt delivered a discourse on

Recent Developments in Colouring Matters.

After saying that the love of colour was innate in the human mind, and that from earliest times there had been an interest in colouring matters, the lecturer quoted the reference made by the Prince of Wales at the opening of the National Physical Laboratory to the aniline colour industry in Germany, as an instance showing that the interest had in no way abated. The Professor then showed, with the aid of several interesting experiments, that the essentials of a dye-stuff were that the substance must not only be so intensely coloured as to be able to communicate its own colour to the substance holding it in solution, but must also be soluble in water or other suitable solvent; furthermore it must be even more soluble in the colloidal substance of the fabric. The dyed fabric was a solution of the dye in the fibre except in the case where a mordant was used, when a suspension of the precipitated matter resulted. All coloured substances could not be classed as dye-stuffs, for example, copper salts; and indeed there were few substances outside the aromatic series which exhibited the necessary qualities. In the aromatic series selective absorption of light was common; it was not therefore surprising that numerous compounds of the class were available. Since the first attempts to cast off empiricism in the chemistry of colouring matters, there had been a careful comparative study of the constitution of these substances, and this had resulted in an ever-increasing knowledge of their structure. It was found that certain groups of elements were necessary in the molecule, these were classed as chromophores and auxochromic groups. Of the former some two dozen were known, and these could only exert their influence in the presence of the auxochromic groups, but few of which were known at present. Several interesting experiments showing the phenomenon of fluorescence were then performed. It was explained that it was caused by ultra-violet light. The azo colours were next dealt with. Their production was a direct result of the attempt to cast off empiricism, and place the study on a sound scientific basis, and the effort has been rewarded with continued success. An enormous number of these substances were obtainable, and, as a result, over three million dye-stuffs were accessible to the chemist, whilst more than five hundred were continually manufactured on the large scale. Passing on to another class of compounds known as the alizarins, the lecturer explained that these substances formed lakes by interaction with a mordant. These bodies must contain at least two hydroxyl groups in juxtaposition, otherwise the power of forming a lake was lacking. Compounds containing up to as many as six hydroxyl groups had been produced. Coming now to the production of synthetical indigo, Professor

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[*] The time allowed for each paper was three hours.

Witt said that this was one of the oldest problems of chemistry. It had been produced in the laboratory for over twenty years, but until recently it was thought impossible to produce it more economically than Nature, a necessary condition to make its production an industrial success. It was not surprising that the indigo planters had showed little apprehension of the danger of which they were occasionally warned. The various steps in the process, and the enormous difficulties which had been overcome by the Badische-Anilin-und-Soda Fabrik were spoken of. The production of indigo was then shown experimentally. A small quantity of the orthocarbonic acid of phenyl-glycine was fused with potash, this gave rise to the production of the potassium salt of indoxyl carbonic acid. This was poured into a large quantity of water and air blown through, when the indigo separated out in flakes. The lecturer said that one could not help feeling some regret that the indigo fields should disappear as the madder fields had done before. It was not all a disadvantage, perhaps, bearing in mind the bread famine predicted by Sir William Crookes, for the fields would be at liberty for the production of cereals. A specimen of benzene which was prepared by Faraday was exhibited, and the lecturer said it was a thing to be looked on with reverence. But what a development had taken place since that first basis was furnished for unravelling the mysteries of the aromatic series!

COMMERCIAL INTELLIGENCE.[*]

British versus German Trade with Chile.—Sir Berry Cusack-Smith, His Majesty's Acting Chargé d'Affaires, in a supplementary report on the trade of Chile for the year 1900, remarks that the British Empire might profitably turn its attention to a table published in the report directing attention to certain articles of import in which we, the United Kingdom, might have a larger share. The table contains a list of over one hundred articles imported into Chile, of which he thinks the British proportion should be greater. Among other things the following are mentioned :—

Articles.	Value.		
	Total Import.	British Share.	German Share.
	Pesos.	Pesos.	Pesos.
Cod-liver oil	36,033	2,290	23,411
Sulphuric acid	156,969	1,721	152,000
Sulphur	135,000	2,000	72,000
Borax	29,000	2,600	24,700
Dynamite and other explosives	162,500	44,300	117,500
Drugs	1,971,700	329,700	1,011,600
Scientific instruments	146,700	32,857	63,600
Scented soap	63,500	16,200	22,600
Perfumery	242,400	25,600	51,000

Sir Berry Cusack-Smith points out, however, that many of the goods sold by the German houses in Chile are of British manufacture, and he thinks there are still great possibilities for British commercial energy in Chile, if that energy is supported and directed by a thorough knowledge of the Spanish language, and a sympathetic study of the customs, wishes, and needs of the Chilian people.

The Orris Root Industry is the subject of an interesting note by Vice-Consul Carmichael (Leghorn), in a recent report. Orris root, he states, is worked into several objects for which there is still a considerable demand. These objects include powder; "palline," or beads of orris root, with a fine hole about the size of a pin's head through the centre; "dentarnolo," or orris root "finger," which is an increasing and not a declining industry; coloured grains; chips; and filings. Orris root powder is familiar to many, but the beads of orris root, Mr. Carmichael states, have apparently never been in use in the United Kingdom, although not many years ago something like 20,000,000 beads were exported from Leghorn every year. Medical science, he remarks, was of opinion 150 years ago that the best means of curing scrofula, and certain diseases of the blood, was to keep a constant open wound in the body of the sufferer. A small cut was made in the arm, a small ivory ball was forced into it in order to make a hole, and into this hole one of the orris root beads was inserted every day so as to keep the wound constantly open. The arm was then bound up and it is said to be still possible to buy at Italian medical instrument makers the special wire-grated bandage prepared for the purpose. Mr. Carmichael thinks that the tendency of orris root to dilate, if placed in any liquid, was the main reason for its adoption in this branch of surgery. Modern science, however, has entirely condemned the system; indeed, many an arm is said to have been perpetually withered as a consequence of the practice.

The Orris Root "Finger" Industry, Mr. Carmichael states, is modern, having only been introduced ten or twelve years ago. The "fingers," which are of different sizes, are simply used in place of the old-fashioned infant's coral, and not only do they serve the purpose of assisting teething, but the very slight quantity of juice which is absorbed in the process of sucking is said to be an excellent digestive. The "finger" industry appears to have originated in Germany, having started at Ebingen, Würtemberg, where fingers, exclusively of Verona root, were first made. The "finger" is flat and oval-shaped, and is secured by a silk thread, which passes through a hole in the end. "If," remarks Mr. Carmichael, "science should establish that the orris root 'finger' is an advance upon the old-fashioned coral, Leghorn may, perhaps, look to find a new customer in the United Kingdom and her colonies." It may be remarked, however, that the use of orris "root" in making issue peas and teething "fingers" is much more ancient than Mr. Carmichael seems to imagine.

Orris Root Reduced to Grains, and coloured blue, red, green, yellow, etc., is exported from Leghorn to Germany and Austria, where it is used to throw upon fires in order to give saloons and entrance halls an agreeable odour. Orris root in the form of tiny chips is said to be chewed by men servants, coachmen, grooms, etc., to remove the smell of tobacco or garlic; while the filings and shavings of orris root are stated to be responsible for the "bouquet" in much wine, the bitter in some beer, and the savour in several soups.

The Production of Cocoa in Africa.—A West Indian merchant writes to the *Times* to say that in a few years' time Africa seems likely to prove a formidable rival to South America and the West Indies as a producer and exporter of cocoa, and those interested in the West Indian possessions of the United Kingdom and anxious to see the islands more prosperous will do well to watch how the cultivation of cocoa is being pushed on with satisfactory results throughout the continent of Africa. This year the German colony of the Cameroons hopes to ship 3,000 bags of cocoa, to be increased, it is estimated, to 10,000 bags in 1906. The *Times* correspondent adds:—"Mr. McClounie, head of the scientific department of British Central Africa, reports the successful shipment from Kew and receipt at Lomba of 210 plants, which had been planted out and were doing well. Lagos is also going in for cocoa, and one of her planters is now travelling in the West Indies to see how the estates are managed in Trinidad and Grenada." He also says that the little Portuguese island of St. Thomé has greatly increased its exports of cocoa in ten years, the shipments in 1891 being under 4,000 tons, whilst last year very nearly 16,000 tons of cocoa were exported.

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[*] From Consular Reports and other official sources.

A Deal in Stick-lac.—Consul W. R. D. Beckett (Chiengmai, Siam) reports that a Chinese trader of Chiengmai some five years ago bought up 1,000 piculs of stick-lac at the rate of 52½ rs.—£3 10s.—per picul—133⅓ lbs. The stick-lac still lies in his "godown," and the home prices remain so low that Mr. Beckett thinks there seems little chance of disposing of his stock for some time to come.

The Value of Camphor exported from Formosa in 1900 was £253,574, an increase of nearly £40,000 over 1899, whilst there was a decrease of nearly £20,000 in the value of camphor oil exported during the year. The camphor trees of Formosa, Acting-Consul Wawn states, are mostly trees which are old and do not produce seeds, and those which do produce seeds are so remote in the savage districts that it has been impossible to make use of them. Consequently, the seeds which have been used for plantation purposes have mostly been imported from Kiushiu and Shikoku, in Japan. The cultivation of camphor trees is reported to have lately been attended with very successful results, the number of young trees suitable for transplantation reaching more than 1,000,000.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

Milk of Sulphur.

At Dunkinfield, on March 27, Allen Saxon, Dunkinfield, was summoned for selling milk of sulphur adulterated with 45 per cent. of mineral matter. The defendant stated that when he purchased the drug from Mr. S. Sharp, chemist and druggist, of Stamford Street, Ashton-under-Lyne, in September, 1898, he was told that it was perfectly pure.—The Mayor said the public must be protected, and defendant would be fined 5s. 6d. and costs.

Liniment of Soap.

At Bow Street Police Court, on April 1, Mr. Marsham gave his decision in the case of Mr. A. B. Spink, 134, Theobald's Road, W.C. (see *ante*, p. 206), who was charged by the Holborn Borough Council with selling to the prejudice of the purchaser soap liniment made with methylated spirit.

Mr. Marsham prefaced his remarks by stating that the case was open to some doubt. He found as a fact that soap liniment was a drug and in the Pharmacopœia. Evidence had been given, he continued, by six chemists and two medical men that soap liniment made with methylated spirit was an article of commerce, and this evidence was not contradicted by the prosecution. He found that soap liniment made with methylated spirit was as strong and efficacious as that made with rectified spirit. It appeared, at any rate, in one wholesale list in which both liniments were quoted. It was evident also that the methylated liniment was largely used as a domestic remedy apart from medical prescriptions, and he found as a fact that it was an article of commerce. He considered that the proper course for a chemist was to ask the customer which liniment he wanted and to label it accordingly, but, with the strong evidence before him, he had no hesitation in dismissing the summons.

Mr. Jones (for the prosecution) said that he might have to ask the magistrate to state a case for appeal on some points of law.

Mr. Marsham replied that he could not see very well how he could do so as his findings were all on questions of fact.

Mr. Beck (for the defendant) said that it was desirable in the interest of chemists generally to get a High Court decision where there was a commercial standard apart from the British Pharmacopœia, and perhaps Mr Jones and he could agree on a statement to present to the magistrate for approval.

Mr. Marsham promised to give such a statement every consideration.

LETTERS TO THE EDITOR.

Provincial Schools of Pharmacy.

The circular of the Federation on the above subject has been the means of bringing it before a good many associations and of having it very fully discussed. So far as one can judge from the necessarily abridged reports of the various meetings, there has been a consensus of opinion favourable to the establishment of such schools, although some seem to doubt its practicability. In all probability the view expressed by the chairman of the Glasgow meeting in opening the discussion on my paper—viz., "that this looked very fine on paper, and it might also probably be that if they were established they would work very well"—defines the attitude of not a few towards the proposal. The establishment of such schools is no mere Utopian idea, but one that has been put to practical proof, one that has turned out a success, and has been not only of great use to the apprentices, but advantageous to the masters as well. As the discussion on the subject at the Glasgow meeting has been more fully reported than any of the subsequent meetings, I would desire to make a few remarks on the objections to the scheme as stated at that meeting, because in doing so I will have dealt with the greater part of the difficulties urged against it in the course of the discussions. The chairman of that meeting, in further discussing the paper, said: "But the difficulty was to get the Government to see that it would require to provide the money for equipping chemists," and another speaker said "he did not think it was the least bit likely that the Government would give any further grants towards pharmaceutical education than they gave at present," instancing the Science and Art grants in chemistry and botany, and then continued: "With regard to other subjects, prescription dispensing and pharmacy, under ideal conditions, these ought to be learned in the shop," and wound up with what was evidently intended to be a clincher: "No Government would ever look at giving grants for these subjects, any more than they would for a plumber learning his trade. He did not think Mr. Paterson had any right to expect any support from the Government on that part."

In reply to these statements I say the Government do not require any convincing to provide the money. They have already provided it, and have handed it over to town and county councils to distribute. All that is necessary is for pharmacists to see that the money has been provided, and bestir themselves to take full advantage of it. I maintain I have a right to expect Government to give grants for teaching prescription dispensing and pharmacy, because they do so in the case of medicine. Further, how about the plumber? The speaker in citing him evidently was not aware that his technical education was provided for by Government out of the grants. They have courses of mathematics, physics, chemistry, etc., and in most technical colleges they have workshops for demonstrations and the carrying out by the pupils the various operations required in the trade under the supervision of the teacher. What reason then can there be for Government refusing grants for prescription dispensing and pharmacy? I have seen it hinted that it was *infra dig.* for us to accept such aid. Why should that be thought? Doctors and dentists accept aid provided for their education. Why should it be thought *infra dig.* on our part to do so too? Another difficulty stated was that classes had been started in the Andersonian University, and professors got to take up the work, "but being only an isolated thing they could never get a properly established school or curriculum to enable students to get through the Minor examination." Their not succeeding in the Andersonian University, under the conditions stated, is no argument against the success of classes properly organised.

The experience of the Aberdeen Association may help to elucidate this point. On the passing of the 1868 Act they arranged for courses of lectures, in their own rooms, by the University lecturers, but they were not a success, and had to be discontinued. The main reason for the want of success was that the lecturers were apt to assume that the students possessed a greater acquaintance with the subjects than was actually the case, and lectured over their heads, so to speak. Afterwards we tried classes in various forms, and at times it looked as if we would be baffled in our educational efforts, but by keeping at it and refusing to be beat we have got them established on a firm and satisfactory basis. To be successful, the schools must be located in an institution where the Government grants are available, not only for teaching, but also for help towards equipment, where evening as well as day classes can be carried on, so that apprentices may have an opportunity of studying during apprenticeship, and thus be in a position to take fuller advantage of the day classes when able to attend them. Lastly, the teacher should be a practical pharmacist with an aptitude for teaching.

There are those who hold that there is no use of establishing provincial schools until a compulsory curriculum is in force, and others that they ought to be set a-going at once; and I am one of the latter. At present there is anything but unanimity on the question of a compulsory curriculum, and it is desirable that a common understanding on the subjects should be reached as early as possible, and I know of no way of so effectually ripening opinion on the necessity of a recognised curriculum as the setting up of at least one good school of pharmacy in each county, because then a large proportion of the apprentices would be going through the course of instruction recommended by the Pharmaceutical Society, and the question would be practically solved. Ample funds are available for the establishment of such schools, and the sooner we set about the work the better.

Aberdeen, March 31, 1902. James Paterson.

Mr. A. C. Abraham and Pharmacopœia Revision.

His prominent position as a practical pharmacist makes any of Mr. Abraham's criticisms on this subject of outstanding importance, but it does not entitle him, or any other person in a similar position, to misrepresent the statements of others in order to indulge in some sneering remarks. In the paper he read before the Liverpool Chemists' Association (*P.J.*, p. 255) the following sentences occur: "One gentleman blames the Pharmacopœia for want of uniformity in not measuring all liquids because it measures some. He would, no doubt, measure balsam of copaiva, treacle, and possibly even syrupy glucose, and for the sake of this precious uniformity do other things of a like nature, for which an apprentice would be reprimanded." Although he does not name the "gentleman," I presume he refers to the instalment of "Pharmacopœia Revision Notes" in the Journal of August 24, 1901. Therein attention was directed to the confusion in weighing and measuring liquids entering into some of the official formulæ, and the hope was expressed that in the next Pharmacopœia convenience of manipulation and manufacture would receive more consideration. Several cases of weighing and measuring were adversely criticised, but nowhere in the article was it contended that all liquids should be measured. The purport of the article was to the effect that whilst the compilers of the Pharmacopœia had thrown aside the old law of "solids by weight, liquids by measure," they had not adopted any definite guiding principle in place thereof, hence the confusion. Had Mr. Abraham perused the article before writing his paper he would have seen he had no justification for the assumption he draws from it. Mr. Abraham then takes me to task for suggesting that an alkaloidal standard should be fixed for powdered nux vomica. Because he never heard of it being used for human beings he rushes to the conclusion that it never is used other than for horses, and, posing as "the superior person," makes a pitiable attempt at sarcastic humour, which I may treat with complacency, for the laugh is much more likely to be against than with him. He is, however, quite wrong in assuming that medical men never prescribe powdered nux vomica. Whether or not they ought to do so is not the question, but that it is used in powders, pills, tablets, capsules, and, to a very limited extent, for the old "green" tincture is a fact, which Mr. Abraham may confirm if he cares to inquire.

Edinburgh, March 31, 1902. W. Lyon.

Cannabis Indica and Digitalis.

With regard to Indian hemp it is my experience that medical men find the preparations of this drug extremely variable, sometimes practically inert, and on other occasions exceedingly powerful, sometimes even toxic in the ordinary doses. So often has this occurred in the past that I know several medical men who have made up their minds that they will in future on no account prescribe the drug. I therefore agree entirely with Mr. Merson when he says that "*Cannabis indica* is notoriously an unsatisfactory therapeutic agent." I am not, however, prepared to follow Mr. Merson when he says that "it is generally conceded that its therapeutic value lies in the resin or resins present." I am not aware that is "generally conceded"; my belief is that there is no general consensus of opinion one way or the other. If the resin be the active principle, how is the fact to be accounted for that the drug deteriorates with age? In a paper on "Extract of Indian Hemp" ('Year-book of Pharmacy,' 1894, p. 489) Mr. David Hooper states that "an alkaloid is present in nearly all the fresh samples of ganja; it occurs only in traces of older specimens, and is altogether absent in extracts that have been kept for some years." Whether we have evidence for the belief that the active principle is a volatile alkaloid such as that isolated by Siebold and Bradbury ('Year-book of Pharmacy,' 1881, p. 453) is, to say the least, extremely doubtful, but there seems to be good reasons for coming to the conclusion that the active principle whatever its nature, is volatile in character. If that be conceded it appears to follow that the presence of a normal percentage of resin is by no means a guarantee of therapeutic activity. It would be interesting to know whether Mr. Merson has determined whether his resins or dry extracts are in any case physiologically active. I ask this question because it is a fact that while the dose of a reliable extract of Indian hemp is 1/8th grain to 1 grain it requires, in order to produce the typical effect, as much as 8 to 16 grains of so-called cannabine tannate, 1½ to 4 grains of so-called cannabine alkaloid, and 1 to 2 grains of cannabinon. It would be interesting to know how the resins compare in this respect. According to Hooper, "the resin contains the active principle," and I venture to think that he would not have used this phraseology if he intended us to believe that the resin is the active principle. Dr. Gordon Sharp admits apparently that our present knowledge of the chemistry and pharmacology of digitalis is not satisfactory, but it is not clear why, on that account, he does not "attach any great importance to physiological tests." Dr. Sharp's proposed tests are ingenious, but inconclusive, since neither of them proves either the presence or the absence of digitoxin, while anyone having experience of Fehling estimations would hesitate before committing himself to a quantitative figure by means of the second test.

Glasgow, March 22, 1902. Thomas Maben.

Stains on Silk.

One of my fair clients brought a beautifully embroidered silk ball dress, on the "body" of which was a deep red spot, caused by an artificial rose. It would not have done to wet it, so, putting a few grains of calx chlorinata into a soda water tumbler and adding a drop or two of acid. sulph., I stretched the fabric over the orifice. The stain immediately began to disappear, and shortly vanished entirely.

Deal, March 22, 1902. R. Goodwin Mumbray.

Mr. Tocher's Scheme.

Mr. Maben wishes to point out that when he spoke, in the discussion on Mr. Tocher's paper at Glasgow, of "only 2 per cent. of boys possessing the necessary certificates for taking advantage of the Carnegie Trust," he was specifically referring to boys under fifteen. Of boys leaving school between fifteen and seventeen about 10 per cent. have those certificates, but it is Mr. Maben's belief that exceedingly few of those lads are at present entering pharmacy.

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply.

Eczema (R. H. S.—72/12).—(1) No. (2) No special precautions are required.

Clay or Marl (C. R. P.—72/3).—Your specimen consists of marl, but we cannot say what variety. Submit it to a geologist.

Certificate of Birth (W. S.—72/6).—Send the French certificate, as it is, to the Registrar of the Pharmaceutical Society.

Preparation for the Hair (E. M. C.—72/7).—Dissolve castor oil in five or six times its volume of rectified spirit and perfume as desired.

F. I. C. Diploma (T. T. C.—72/4).—Write to the Secretary of the Institute of Chemistry, 30, Bloomsbury Square, London, W.C., for a copy of the regulations.

Liq. Ferri Phosph. Magnet. (J. B.—72/15).—It is a proprietary preparation, made by Mr. J. H. Lightfoot, of Accrington. The formula has not been published.

Capitulum (C. C.—72/9).—You will find this and other speculative matters dealt with in an interesting fashion in the late Grant Allen's botanical works, to which we must refer you.

Tinct. Nucis Vom. in Mixture (H. B.—72/5).—Yes, the combination is a safe one, but a bluish colour may develop in the mixture on keeping, owing, apparently, to a reaction between the igasuric acid present and the alkali.

Chiropody (H. S.—72/13).—So far as we are aware, the necessary instruction can only be obtained from persons who are practising the art. Your friend should consult the advertisement columns of the medical weeklies and other likely papers.

Coloration in Mixture (J. J. M.—127/23).—The coloration is evidently due to the action of the liberated chlorine, as you suggest. The variation in colour on different occasions may be due to a variation in the time which you allow to elapse before adding the other ingredients of the mixture.

Photographic Chemicals (J. H.—127/42).—Sodium acetate can be purchased at a much lower price than that you mention. Write to Messrs. Harrington Bros. for a copy of their list. The price of potassium chloroplatinite varies, and is at present considerably higher than was stated recently.

Arrhénal Treatment (W. A. J.—72/14).—You will find a paper on the subject, by Professor Gautier, in the *Comptes rendus de l'Académie des Sciences* for February 10 last. A brief abstract of that paper was published in last week's *P.J.* (see p. 253), and you can consult the original in the Pharmaceutical Society's Library, at 17, Bloomsbury Square.

Foreign Technical Dictionary (J. S. W.—72/10).—You are not likely to find all you require in any one book, but Edel's 'Technologisches Wörterbuch' (F. Vieweg and Son, Brunswick), and Tolhausen's 'Dictionnaire Technologique' (B. Tauchnitz, Leipzig), deal with most of the subjects you mention. Both the works named are in the Pharmaceutical Society's Library. For a list of terms likely to occur in French and German prescriptions you must refer to the 'Art of Dispensing' or some other work of similar character.

Gilding Picture Frames (E. M. C.—72/7).—Gold leaf gives the best results, but its application requires considerable skill. Any dealer in gold leaf should be able to give you the necessary instructions. The so-called gold paint which is frequently used for gilding purposes is prepared by suspending 1 part of "rich gold" bronze powder in 4 fluid parts of a medium which may consist of (1) pale japanner's gold size or quick-drying copal varnish, diluted with turpentine; (2) a solution of mastic in benzene, which has been neutralised by agitation with solution of potash; (3) a dilute solution of gutta-percha in benzene, or in a mixture of benzene, 3, and chloroform, 1; (4) a celluloid varnish, which can be prepared by dissolving celluloid parings in amyl acetate, but is best purchased ready made.

Furniture Cream (J. G.—72/11).—A simple yet effectual furniture polish can be made by dissolving yellow beeswax, 1, in oil of turpentine, 2½, on a water-bath. If, however, a "cream" is required, the solution of beeswax must be mixed with a hot aqueous solution of Castile soap. Thus, dissolve Castile soap, ½ oz., in boiling water, 1 pint, and mix with a hot solution of yellow beeswax, 2 to 8 ozs., in oil of turpentine, 1 pint, the proportion of beeswax being varied according to the thickness of the cream desired. The mixture must be stirred briskly until it begins to set. Note that the beeswax should be free from paraffin or any trace of acid. The following is another useful formula:—Yellow wax, 5 oz.; white wax, 1 oz.; Castile soap, 2 drachms; potassium carbonate, 2 drachms; boiling water, 2 oz.; turpentine, 20 oz. Melt the wax in the turpentine by the aid of gentle heat. Then dissolve the soap and potassium carbonate in the water, mix slowly while hot with the turpentine solution, and stir the mixture constantly until cold.

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LONDON: SATURDAY, APRIL 5, 1902.

THE QUALIFYING EXAMINATION IN PHARMACY.

The demand for a division of the Minor Examination has been followed by a suggestion that the Pharmaceutical Society should cease to examine candidates in the purely scientific subjects now included in the syllabus of that examination. That is to say, instead of testing candidates as to their knowledge of chemistry, practical chemistry, and botany—in addition to materia medica, pharmacy, etc., as at present—it has been proposed that the Society's examiners should be authorised to accept certificates in the former subjects from recognised examining bodies and make the qualifying examination in pharmacy a purely technical one. The advantages claimed for the proposed change are that candidates would be relieved of the pressure now caused by having to present themselves for examination in so many subjects at once, while it would become possible to subject them to more searching tests in the special technical subjects with which they ought to be fully conversant. The time devoted at present to testing a candidate's knowledge of those subjects does not exceed three to four hours, and it is doubtful if that ought to be considered sufficient, when due regard is paid to the importance of the duties which the successful candidate may expect to be called upon to undertake.

That it would be more merciful to the candidates to exclude the purely scientific subjects from the scope of the Minor Examination is clearly shown by the figures in Dr. Thos. Stevenson's latest report as Government Visitor, which indicates clearly that nearly half of the candidates during the year just ended were rejected for weakness in chemistry, practical chemistry, or botany. Thus, while 750 out of the 1,036 candidates who presented themselves for the qualifying examination failed to satisfy the examiners, no less than 374 failed in the scientific subjects alone, as witness the following tabular statement:—

Subject.	Failures.	Percentage.
Chemistry	43	5·7
Practical Chemistry	313	41·7
Botany	18	2·4
Total	374	49·8

It is somewhat significant, by the way, that the examination in the subjects referred to in the foregoing table was conducted entirely by external examiners, all of whom are engaged in teaching the subjects in which they examine. Some evidence appears thus to be afforded in support of the contention that university or college examinations in chemistry and botany might with advantage replace the corresponding portions of the Pharmaceutical Society's qualifying examination. It would certainly appear that, since half of the candidates who now fail to pass are rejected by the teaching examiners alone, the number who would fail to satisfy the pharmaceutical examiners under the proposed new arrangement ought to be reduced by at least fifty per cent. It may, of course, be suggested that another effect of such a re-arrangement would be to reduce the number of candidates who present themselves for the qualifying examination, but experience has proved that any reduction of the kind is always of a merely temporary character. Already the effect of the increased examination fee, in reducing the number of entries, has ceased to be felt, as witness the large number (497) of candidates who have presented themselves this month.

So far as the Major Examination is concerned the result is similar to that produced in the case of the Minor Examination, but much worse, the teaching examiners having been responsible for the rejection of nearly seventy per cent. of the candidates during the twelve months just ended. Thus:—

Subject.	Failures.	Percentage.
Chemistry	2	3·8
Practical Chemistry	29	55·8
Botany	5	9·6
Total	36	69·2

As in the case of the Minor Examination the greatest weakness was shown in practical chemistry, a sure indication of imperfect instruction in that particular subject. But, over and above that, especially so far as concerns the Minor Examination, it should be clear to everyone that the struggle to attain proficiency in the purely scientific subjects, by the aid of insufficient means, must react in an unsatisfactory manner upon the rest of the student's work. While he is conscious of his weakness in chemistry and botany, it must be impossible for him to do justice to the remaining subjects, the more especially since those subjects are applications of the sciences named. It may be contended, further, that the subjects of materia medica, pharmacy, etc., cannot be studied to the best advantage at the same time as the sciences upon which they are based, particularly in the elementary stages. On the whole, therefore, there appears to be a fair case for instruction and examination in the purely scientific subjects preceding examination in the technical subjects. Whether scientific instruction should also precede technical training is, of course, another question, involving the entire abolition of apprenticeship in pharmacy. But that is a point which may be left for the present, since the method of conducting the qualifying examination is a matter of much greater immediate importance, requiring undivided attention for its proper settlement.

ANNOTATIONS.

A Member of the Society writes to say that reading the article on the medicine stamp duty in last week's Journal and the case reported at page 260 made him wonder how long chemists would continue to "bear the tyranny of the Medicine Stamp Act without raising a finger to help themselves." That is certainly an interesting question so far as it relates to the view of the Act put forward last week and repeatedly stated on previous occasions without attracting much attention. But, in speaking of the tyrannical application of the Act to struggling chemists, our correspondent appears to overlook the circumstance that the action of chemists in helping to promote the trade in secret and proprietary remedies has had the effect of counteracting the primary intention of the Medicine Stamp Act to such an extent that the Government stamp, which was to be a means of repressing the sale of those remedies, has come to be commonly regarded as an authoritative endorsement of the claims put forward by the makers of those remedies as to their curative virtues. Whether chemists could generally be induced to co-operate for the purpose of retrieving that mistake, and of bringing about such a rational distinction between secret remedies and official medicines as the provisions of the Act appear to have had in view, is a further question which cannot be answered offhand.

The Pharmaceutical Council Election takes place next month, and the list of those who have been nominated will be presented to the Council at next week's meeting. The seven members of Council whose term of office expires this year are Messrs. Carteighe, Glyn-Jones, Harrington, Harrison, Park, Southall, and Rymer Young. They are all eligible for re-election, and we understand that only three other persons have been nominated and expressed their willingness to accept office if elected. Apparently there is no great anxiety to serve on the Council at present, and nothing very startling may be expected in the shape of election programmes. At the same time there will be a contest, and doubtless more or less valid reasons will be advanced in favour of replacing old and tried representatives by members of the Society who have not previously served on the Council.

The Insecticide Case Appeal has been abandoned, an intimation to that effect having been made to the Newcastle-under-Lyme magistrates on March 26. Apparently Mr. T. G. Dobbs has felt it undesirable to proceed further in the matter, and, on application being made, the magistrates consented to the withdrawal and ordered the recognisances of Messrs. M. and E. Jenkinson to be vacated. In connection with the Medicine Stamp Act case reported last week (see p. 260), we are informed that an application has been made to the Brentford magistrates by the Somerset House authorities, to state a case for the High Court, with a view to contesting their decision regarding Mr. Sanguinetti's label, and that the magistrates have consented to state a case. The only other legal intelligence of special interest this week is the report of the magistrate's decision in the soap liniment case (see page 280). Mr. Marsham has found that the liniment is an article of commerce, which may be prepared with either rectified or methylated spirit, and the summons against Mr. Spink has been dismissed accordingly. It should be noted, however, that Mr. Marsham thinks a chemist asked for the liniment should ask the customer whether the preparation made with rectified or methylated spirit is required.

The Abuse of Prescriptions is the subject of an article in the *Hospital*, in which exception is taken to the repetition of prescriptions without the consent of the prescriber. Examples are given of the manner in which copies of prescriptions are circulated by patients and their friends, and attention is directed to the facility with which morphine and other poisons can be obtained by persons who possess prescriptions in which such potent remedies are ordered. With a view to checking the latter abuse in particular, it is suggested that when, if ever, the Pharmacy Acts are amended, it might be possible to secure the insertion of a clause compelling chemists to indicate upon prescriptions the date when dispensed, or a clause forbidding the making-up of mixtures containing poisons, without special instructions. But it is within the power of physicians to take action at present, without the necessity of applying to Parliament, all that is requisite being an intimation on the prescription that it must be retained by the dispenser and no more of the mixture supplied until a further written order is received from the prescriber. After all, a prescription is merely an order to dispense certain medicine, and it is for the prescriber to decide and say whether the order shall be definite or indefinite.

The Choice of a Disinfectant ought not to be influenced seriously by the report recently presented to the London County Council by Drs. Klein, Houston, and Gordon, inasmuch as the experiments conducted by those gentlemen neither proved nor disproved anything with regard to the disinfecting properties of the substances experimented with. Carbolic acid, sodium permanganate, chlorinated lime, corrosive sublimate, formic aldehyde, and sulphur dioxide were applied to materials infected with various pathogenic germs, and the results recorded show that some of the substances used are more active as microbicidal agents than others. But disinfection involves much more than the killing of pathogenic germs, and the term is properly restricted to the effects produced by the oxidation of organic refuse. Such oxidation takes place naturally under the influence of air, light, and water, but it can be facilitated by the use, under suitable conditions, of permanganates and other substances which give off oxygen, or by the use of free chlorine, which causes the decomposition of water and consequent oxidation of any toxins or decaying matter which may be present. To return to the County Council experiments, the typhoid bacillus and the vibrio of cholera were killed by all the agents employed except sodium permanganate and chlorinated lime. Formaldehyde and sulphur dioxide killed the bacillus of diphtheria, but anthrax spores could only be destroyed with certainty by mercuric chloride, while both carbolic acid and mercuric chloride proved fatal to tubercle bacilli. Regarded as a whole, the experiments prove but little that was not known before, and so far as true disinfection is concerned they prove nothing.

American Drug Stores are noted for the startling variety of their side-lines, the list of goods sometimes offered for sale by druggists including wall papers and various other articles which never suggest themselves in the wildest dreams of chemists and druggists on this side of the Atlantic. It is now reported that the latest development of the circulating library in America is the conversion of certain New York drug stores into branch offices by fitting them with revolving bookcases to hold a hundred and twenty volumes, which can be changed each week, members of the libraries being permitted to take any book on loan by dropping five cents in a slot. The *Daily Chronicle*, in commenting on this new departure, suggests that it will be interesting to see how many more uses the New York drug stores can or will be put to. At present one can buy in them not only everything in the way of medicines, but a bewildering variety of summer drinks. Most of them, too, possess public telephone boxes, and are connected with the nearest district messengers' office, while practically all of them sell stamps by arrangement with the Post Office. The latter is said to be an arrangement which suits both parties admirably, since one girl acts both as cashier to the drug store and as a Government clerk The drug store gets increased custom, and the Government saves the expense of building an infinity of branch offices, while to the public, which has only to go round the corner to purchase its stamps, on Sundays as well as week days, the convenience is welcome.

The Medical Register for 1902 shows that the number of persons whose names were added to the Register during the past year was 1,318, as against 1,345 during the year 1900, whilst 116 persons had their names restored. On the other hand, 877 names were removed, for various reasons. The total number of names in the Register on December 31 last was 36,912, being more than 1,100 above the average for the last five years, and more than 8,000 above the average for the last twenty-five years. The 'Dentists' Register' for 1902, which has also been received from the publishers—Messrs. Spottiswoode and Co.—includes 4,641 names, including those of 2,009 licentiates in dentistry, 2,606 other United Kingdom dentists, 3 colonial and 23 foreign (American) dentists.

Mr. Edward Baker, of Chichester, whose death was recorded last week, appears to have had a much more eventful life than falls to the lot of most chemists and druggists. Early in life he joined the Army, and saw service in the Crimea, India, Barbados, Corfu, and other places, being the oldest survivor of his regiment, the 34th Foot. He acted as hospital sergeant at the siege of Sebastopol and took part in the attack upon the Redan, being subsequently awarded the medal for distinguished conduct in the field. On the return of his regiment after the Crimean War in 1856, a handsome service of plate was presented to him by the officers of his regiment, in grateful remembrance of the kind and unremitting attention he evinced towards them when wounded during the siege of Sebastopol. A trophy of a Russian eagle, which now adorns the officers' mess, was secured by Sergeant Baker at the capture of Sebastopol. Later, the regiment took an active part in the Indian Mutiny, Sergeant Baker being with a party of the first British troops that entered Cawnpore after the terrible massacre. He was also present at the Relief of Lucknow, and possessed five medals when he left the Army. Settling down to civil life in Chichester, he carried on a successful business as a chemist and druggist for many years. He also took a very active part in the affairs of the city and was a member of the Town Council for nearly six years, while he was also an energetic member of the local Board of Guardians.

Professor Nils Peter Hamberg, whose death occurred at Stockholm on February 13 last, was one of the oldest honorary members of the Pharmaceutical Society of Great Britain, having been elected in 1856, the same year as Sir Alfred Baring Garrod, who now remains the oldest honorary member, the next place being taken by Professor William Odling, who was elected in 1862. Professor Hamberg was a doctor of medicine and Inspector of the Pharmaceutical Institution, Stockholm.

The Council of the Linnean Society has recently received a memorial, supported by a considerable number of the Fellows, favouring the election and admission of women into the Society. Under the existing Charter there is no power to make this innovation, and the Council has issued a form of inquiry with the object of ascertaining the views of the Fellows at large, whether favourable to the proposal or not. In the event of a majority of the Fellows favouring the change steps will probably be taken to secure a supplementary Charter, as it is understood that no difficulty will be experienced in meeting the necessary expenses, without any call being made upon the Society's funds.

Professor J. H. Van t'Hoff, of Berlin, delivered the Raoult Memorial Lecture at a meeting of the Chemical Society held in the theatre of the Royal Institution on Wednesday, March 26. He referred to the secluded nature of Raoult's life, the distinguished chemist taking practically no part in public affairs, but living the greater part of his life in retirement at Grenoble. His scientific career may be divided into three distinct periods, since at first his work was chiefly that of a physicist, but later of a purely chemical nature, and lastly that of a physical chemist, the third period being that in which he won his pre-eminent reputation. A typical research in the first period was his work on the heat of chemical action, as distinct from that of electrical action, in cells of the Daniell type. His chemical work included varied investigations, many having an origin in technical inquiries. But chemistry has been most profoundly modified by the physical bias given it during the last fifty years, and few have had a greater share than Raoult in the splendid results that have been achieved. Formerly the two main doctrines on which chemistry rested were the atomic theory and the vague notion of affinity, but physico-chemical work has added two other great generalities fully worthy to rank with the former—the laws of solution and of electrolytic dissociation. Thus, Raoult established by experiment that there is a definite connection between the lowering of the freezing point of a dissolved substance and its molecular weight, and further that there is a similar connection between the molecular weight of a dissolved substance and the change in boiling-point (vapour-pressure) of the liquid in which it is dissolved. This led to the important generalisation that the osmotic pressure of a dissolved substance bears a definite relationship to the pressure it would exert if it were in a state of vapour—a theory which has been of immense service in elucidating the nature of solutions, and has also led to the theory now widely accepted as to the existence in dilute salt solutions of the ions of the dissolved substance.

The Poisoning Fatalities reported since our last issue are twelve in number—three accidental cases and nine suicides.

Poison.	Accident.	Suicide.
Ammonia	1	1
Carbolic Acid	—	2
Chlorodyne	1	—
Nightshade (*S. nigrum*)	1	—
Oxalic Acid	—	1
Potassium Cyanide	—	2
Prussic Acid	—	2
Sheep Dip (Cooper's)	—	1

Ammonia solution caused the accidental death of a child at Ashton-under-Lyne, and was taken with suicidal intent by a woman at Blackburn. Carbolic acid suicides occurred at Brierfield and Liverpool, both victims being men. The Liverpool Coroner said the present restrictions on the sale of carbolic acid are insufficient, and the jury agreed with him. An overdose of chlorodyne was taken by a mantle maker living at Hulme, Manchester. The root of *S. nigrum* was eaten by a boy at Putney, with fatal results. Oxalic acid was taken by a Merthyr haulier who had been out of work for some weeks, and had become despondent in consequence. Potassium cyanide caused the death of a Brixton analyst, who was suffering from the effects of over-study, and also of a Walham Green watchmaker, who committed suicide on Wimbledon Common. Prussic acid was taken by two chemists and druggists—A. W. Forster, of Norwich, and M. C. Carruthers, of Gravesend. Finally, some Cooper's sheep dip was taken with suicidal intent by the wife of a farmer at Trallong, Brecon.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION.

A meeting was held on Tuesday, March 25, at the Royal Hotel, Bradford, the PRESIDENT, Mr. Arthur Hanson, in the chair. There was a good attendance of members, and the PRESIDENT opened a discussion on

DISPENSING AND PRESCRIBING.

Mr. HANSON said the dispensing of prescriptions belonged to the chemist rightly, and in the compounding and dispensing of drugs and medicines his calling was as truly professional in character as that of the physician or the surgeon. To exercise that calling properly required a broad and liberal education with precise technical knowledge and the exercise of a high degree of operative skill. Many physicians who formerly expected their prescriptions to be made up by the chemist now wrote a prescription only when they had a poor patient and desired the chemist to share in the charity. One cause which had contributed greatly to that result was the number of unqualified and disreputable persons employed in pharmacies who had infringed upon the province of the doctor, and thus brought discredit upon the whole profession, and the argument used by some medical men was that the pharmacist was incompetent to do the dispensing, or that he often handed it over to his assistant or apprentice. This, of course, was a very poor excuse. Then, again, the increase in the number of low grade medical colleges and a consequent over-production of graduates of corresponding quality was a factor in the case. Then there were the manufacturers who made a specialty of supplying physicians with their ready-made medicines. Regardless of the nature of the remedies, these were put up in a most convenient form for dispensing, generally in the shape of tablets. Some of these houses were particularly anxious to save the mental ability of the physician by supplying pamphlets and pocket-books showing at a glance when and how to give these special preparations. All that the physician had to do was to ask where the pain was, and then run down the list until he came to the proper remedy, count out the number of tablets and charge in the bill. That process did not require any wearying thought. In fact, in many cases, the doctor did not even take the trouble to divide the contents of the bottle, but sent it out just as he received it. Then when the patients had similar symptoms at some future time, off they went to the stores for a bottle of tablets, producing the original bottle to show what they wanted, and also recommending their friends to buy them. The most surprising circumstance in regard to this practice was that it should find favour with a profession which was so astonished at the credulity of the ordinary individual who went and bought a patent medicine prepared by someone who never saw him, and so indignant with the chemist for selling such rubbish. Yet the doctor who dispensed ready-made prescriptions was as credulous as the dupe who bought patent medicines, and more culpable than the chemist who sold them, because he had the face to charge for his services. The doctor who dispensed his own medicines must compose them from the stock which he had in his own possession, and where was the surgery which contained a full stock of drugs? If his stock did not contain the medicine suitable to the particular case under consideration, then he must substitute something else. Thereby he became a substituter to his own prescriptions. Such a thing as substitution by a chemist would, of course, be considered most outrageous. Suppose the doctor had a full stock of remedies, did he possess the knowledge and skill required to dispense these drugs into medicines, test their purity, avoid incompatibilities, and so on? His own personal knowledge of some doctors enabled him to answer that question emphatically in the negative. Then again, how many doctors had the time to devote to proper dispensing? Was not this very often done by the wife or others who performed various duties on the premises? Again, suppose the doctor was honest and had a full stock of drugs, so that he would always have at hand the precise article for every occasion, and that these would be fresh and pure and of full strength, and that he would not substitute a cheaper for a more costly remedy, and that he would not rather dispense a ready-made prescription than a difficult and troublesome one. Granting all those, there yet remained many reasons why the dispenser and prescriber should not be united in the same person. Hundreds of instances had been recorded in which the compounding of the prescription as written by the physician would have been almost certainly followed by a fatality. Would the physicians have avoided those mistakes if they had dispensed the medicines instead of writing the prescriptions? The only effective precaution against such mistakes was interposition of the learning and judgment of a competent dispenser between the physician who prescribed and the patient who took the medicine. A paragraph from the *Lancet* said: "Medical men very rarely make mistakes, because if they did they would be heard of, and how often are they heard of?" On that point he left his audience to judge for themselves. He knew a case in which a doctor wrote a simple prescription of subnitrate of bismuth and carbonate of soda. It was procured from the leading chemist in the place, but on his next visit the doctor was not satisfied with it. It lacked that lumpy, muddy appearance which the profession were accustomed to see in their bismuth mixtures, and, strange to say, it required but little shaking to keep it in suspension. This was a most suspicious circumstance, and therefore he resolved to dispense it himself. He sent to his surgery, and on the way back the bottle burst in the boy's hands. A second bottle was sent for, and that burst in the patient's house. The chemist was then called in again, and he had the impertinence to say that the mixture had been improperly dispensed, and, in consequence, explosions had taken place. He felt sure that every chemist had had cases of wrongly-dispensed medicines, overdoses in prescriptions, and incompatibilities too numerous to mention brought to his notice, and he felt that in the near future the Pharmaceutical Society should make a point of inquiring into this trespassing on the preserves of the chemist, and that it was the duty of every chemist to try and promote good feeling between the doctors and the chemists, and to show the medical profession that it would be to their interests to let the dispensing of medicines be done in its proper place by a properly qualified chemist. If doctors were to dispense their surgeries should be subject to the same laws and regulations as a pharmacist's shop. As to prescribing he believed that it was almost impossible at present to conduct a pharmacy without supplying medicines for minor ailments; but he recommended that they should do as little prescribing as possible. Whilst it was not well to force the public on to the herbalist and other quacks, it was well to avoid clashing with the medical man's legitimate practice. There were chemists who went out of all bounds in this respect, and, sinking all their self-respect for the sake of a few shillings, brought discredit on them all.

DISCUSSION.

A discussion followed, in which Alderman Dunn, Mr. R. W. Silson, Mr. Marshall, Mr. Waddington, Mr. Firth, Mr. Penty, Mr. Bailes, and others took part. A general opinion was expressed that the chemist had such small opportunity of dispensing that he was bound to take what opportunities he had of prescribing. A suggestion made by the President that at the next meeting members should exchange lists of dead stock which they would be willing to supply each other with was heartily adopted. Alderman **Dunn** proposed that the local medical societies should be communicated with on the subject of an arrangement in regard to dispensing and prescribing, but nothing was done in the matter.

Questions in regard to the forthcoming election of members of the Pharmaceutical Council and to the proposed federation of chemists' associations in Yorkshire were discussed briefly, and it was determined to hold a special meeting a fortnight from that date to deal with these matters.

CARDIFF AND DISTRICT PHARMACEUTICAL ASSOCIATION.

At a general meeting on Wednesday, March 26, in the Park Hotel, Cardiff, the **President** (Mr. R. Drane) in the chair, the subject submitted by the Federation—viz., "Compulsory Curriculum," "Division of the Minor," and "The Apprenticeship Question"—were discussed.

Division of the Minor.

The **President**, in opening the discussion, spoke in favour of a compulsory curriculum, but considered the time not yet come for its adoption. He thought efforts should first be made in the direction of improving the conditions of the chemist, obtaining better remuneration for his labour and fuller recognition of his importance.

Mr. A. **Hagon** (Treasurer), whilst considering that active support should be given by the Association to any proposition which would tend to lessen the high percentage of failures at the Minor Examination, did not consider an enforced curriculum the best means of bringing about that result. He thought division of the examination would have a much better effect, and moved:

That the Minor Examination be divided into two parts, the manner of division to be left in the hands of the Pharmaceutical Society, and that the enforcing of a curriculum be postponed for the present.

This was seconded by Mr. **Alfred Griffiths** and carried unanimously.

The discussion of "Apprenticeship" was postponed to a future meeting.

On the proposition of Mr. A. J. **Bellamy**, Hon. Secretary, seconded by the **Treasurer**, Mr. A. Griffiths was unanimously elected "Commercial Secretary" for the ensuing year.

The Sale of "Patent" Medicines.

The **President**, in calling upon Mr. Hagon to bring forward a motion of which he had given notice at the previous meeting, commented upon the large and growing demand for so-called patent medicines—many of them made in America—and upon the injury inflicted on the trade by their sale. Personally he had always set his face against them, and had resolutely refused to stock these frequently useless preparations, which were foisted upon a gullible public by alluring advertisements. He suggested that as a partial remedy the members of the Association should put up a series of rational remedies, to be sold whenever possible in place of them.

Mr. **Hagon** said he looked upon the "patent medicine" business from the philanthropic as well as from the commercial side, and thought the chemist, as far as lay in his power, should protect the public from those who would induce them to buy an article at 2s. 6d. or more that was worth possibly 3d., and should petition the Legislature to pass an Act enforcing in this country (as on the Continent) the publication of the formulæ of all proprietary medicines as a means of lessening the evil.

Mr. **Gerhold** pointed out that the paternal German Government analysed all foreign proprietaries imported into the country, and if found to contain any injurious substance their sale was prohibited.

Mr. **Mumford** thought it would be useless to ask Parliament to pass any measure which would interfere with a business bringing in some £300,000 per annum to the revenue of the country, and that it would be much better, by means of such an Association as the P.A.T.A., to do the utmost to obtain a better profit on these goods, for to attempt to do away with patent medicines would be as successful as Mrs. Partington's endeavour to brush back the Atlantic with a broom.

It was decided that this subject should be again discussed at a future meeting.

The **President** announced that he had been successful in securing the closing of all pharmacies in the centre of the town at 2 p.m. on Wednesdays.

This concluded the business.

TORQUAY CHEMISTS' ASSOCIATION.

The first annual meeting was held on Thursday, March 20, at the Pavilion Hotel, Mr. R. **Sloman** presiding.—The **Hon. Secretary** (Mr. J. Young), in presenting the annual report, congratulated the members upon the good work which had been done in the past year. The Association had not only created a bond of friendship amongst the whole of the chemists of Torquay, but it had undoubtedly benefited them in a financial sense. The scheme of co-operative buying adopted by many of the members had proved a great success.

The **Hon. Treasurer** (Mr. Bourne) reported that the Association was in a sound financial position, in spite of the large number of meetings held and the heavy expenditure incurred in printing, also in forming the Association.

Election of Officers.

The following officers were elected for the ensuing year:—Mr. Knight, President; Mr. Ness, Vice-President; Mr. Young, Hon. Secretary; Mr. Horner, Hon. Treasurer; Messrs. Cutmore, Lee, March, Newlyn, Rawling, and Sarson (Paignton) as Executive Committee

Medicine Stamp Duty.

A discussion then took place concerning the activity of the Inland Revenue authorities in respect to medicine stamp duty, and some interesting, but decidedly unpleasant, experiences were related by the members present, and it was suggested that chemists should join the Chemists' Defence Association, which it was understood would defend certain cases under the Stamp Act.

Mr. **Young** considered that it was clearly the duty of the Pharmaceutical Society, as the representative body of the trade, to undertake this work, and said that at least half the chemists in Torquay had withdrawn their support to the Society on account of its apathy.

Mr. **Knight** suggested that the Pharmaceutical Society should attempt to obtain a clearer interpretation of the Act, as no one seemed able to understand it in its present form.—After a long discussion, it was unanimously resolved that a letter be sent to the Council of the Pharmaceutical Society stating:

That the members of the Torquay Chemists' Association desire to bring to its notice a series of frivolous and vexatious prosecutions instituted by the Board of Inland Revenue against certain members of the Society, and that it is the opinion of the Association that the Pharmaceutical Society should take steps to actively defend certain cases in the interests of the trade.

Upon the suggestion of Mr. Young, it was resolved that a letter be sent to Mr. Layland Barratt, M.P. for Torquay, requesting him to ask a question in Parliament as to "whether half the fees recovered by Inland Revenue authorities go to the informer."

A hearty vote of thanks was accorded to Mr. Sloman and the retiring officials for their past services.

EDINBURGH DISTRICT CHEMISTS' TRADE ASSOCIATION.

A meeting of the Association was held in the Pharmaceutical Society's house, 36, York Place, Edinburgh, on Thursday, March 27, at 9 p.m. Mr. David McLaren in the chair.

The minutes of last meeting were read and approved.

Apologies for absence were intimated from Messrs. Lunan, Glass, and McBain.

Annual Excursion.

It was resolved that, owing to the British Pharmaceutical Conference meeting this year in Dundee, the Association should not have the usual annual excursion.

Medicine Stamps.

Mr. Boa said he had been called upon recently by Mr. Napier, of Bristo Street, who suggested that it would be a great advantage if the Revenue stamps for proprietary medicines were sent out in perforated gummed sheets like postage stamps. The present method of sending them out in sheets, and requiring to be cut and trimmed by scissors was very inconvenient. At the committee meeting the other day it had been suggested that he (Mr. Boa) should bring the point under the notice of the Association. Mr. Napier had suggested that a few of them could combine and make a representation to the Inland Revenue Department.

Mr. McLaren said he had experience in a case where they used as many as a gross per day of these labels, and he did not think there was any real difficulty in the present system.

Mr. Forret said he had never used a medicine stamp, and never intended to do so.

Mr. McGlashan said it would be better to have them gummed and cut, and sent out in bundles.

Several members stated that they hardly ever used these labels.

On the motion of Mr. Bowman, seconded by Mr. McGlashan, it was agreed to take no action.

Sale of Poisons.

Mr. Boa said they had recently heard a good deal about the sale of poisons, and he was inclined to think that they were sometimes in danger of doing things which were prejudicial to their own interests. The Legislature had put upon them the responsibility of the sale of poisons. They were, therefore, charged with a certain duty to the public. In the first place, they had the sole right to sell poisons. In the second place, they had a duty to sell poisons in such a way as to secure the safety of the public. In the third place, he did not think they had a right to put any unnecessary restrictions on the public receiving such poisons as they wished. They had no right to refuse to supply, say, one pennyworth of laudanum or chloroform. They ought to assume that the person who asked for the poison was sane, unless there was some obvious evidence that there was something wrong. The object of the poison regulations was to see that poisons were sent out in such a way as to prevent any disastrous results in their use. They were not justified in refusing to supply. They were, in a sense, like a hotel-keeper who was licensed to sell liquor, and must supply it on demand. There was a tendency sometimes, he thought, to make unnecessary objections in the selling of poisons required for remedial purposes, or for use in the arts. The consequence was that there was apt to be on the part of the public a demand for greater facilities. They should always remember that the object of the regulations was the safety of the public, and not mere restriction of sale. The public, or at least a large proportion of them, were now much more highly educated, and a plan that worked well enough twenty years ago was often entirely out of date. For example, a person applies to a chemist, say, for perchloride of mercury. If the person is unknown the chemist cannot sell. But an effort should be made in such cases to make it easy for persons to get what was wanted. It was not right merely to turn them away by saying the law did not allow one to sell to a stranger. They might be able to get someone to introduce them if a little trouble were taken. Unless that was done persons who had been in the habit of being supplied without difficulty where they were known, who really wanted the poison for a legitimate purpose, were apt to be aggrieved, and begin to want facilities for being supplied elsewhere. They would see what attitude he thought they should take up in regard to poison regulations. There were other points on which he thought they should be careful. He referred to the use of the poison bottle. He had seen laudanum sent out in a poison bottle, and bearing a glaring red label. He thought that was wrong, and did away with the main object of the poison bottle, as well as the red label, which was to emphasise the difference between internal and external remedies. Many of these practices were, of course, adopted from fear of coroners, who very frequently treated chemists in a very unjust manner. He thought that when those individuals offended in that way, as they often did, the Pharmaceutical Society should call them to book. He thought it was the duty of the Society to protect its members against the unjust aspersions that were sometimes cast upon them in this connection.

Mr. Henry said he agreed with Mr. Boa. They had delegated to them the selling of poisons, and it was right that they should supply them, and there should be no excuse for anyone wishing to go elsewhere.

Mr. R. L. Hendry said if, say, a young lady asked for one drachm of corrosive sublimate, would they be justified in supplying it?

Several members said certainly, if she was known to him.

Mr. Forret said he agreed with Mr. Boa. He did not think they were entitled to refuse to sell under ordinary circumstances. They were the legal sellers of poison, and if applied to were bound to supply what was wanted, unless, of course, there was some obvious reason to the contrary, if the purchaser was uncertain as to how the poison was to be used, or in the case of children. He very frequently sold perchloride of mercury both to professional and amateur photographers.

Mr. Bowman asked what kind of bottle should be used when 2 oz. of laudanum was ordered with directions to take twenty drops as a dose, and also directions to put a tablespoonful in a poultice.

Mr. Boa said he thought in such cases two bottles should be used, one labelled "twenty drops for a dose," the other, which might be a poison bottle, labelled, "a tablespoonful to be added to the poultice."

Mr. Forret said that was an example of a very dangerous form of prescribing, which they sometimes came across.

Mr. Brown, West Calder, said he had recently had a case in which 3 oz. of laudanum had been prescribed for a woman to be used for external application to a bad leg. It was put in a poison bottle, and labelled laudanum in the usual way. The woman brought it back, and said there must be something wrong, because the wrong dose was on the label. It was the ordinary laudanum label that had been used, with the dose twenty-five drops printed on it, and she had been told to use a much larger quantity for the external application.

Mr. Blenkiron said it was a common thing for dentists to order 1 oz. of laudanum to be used as a mouth-wash. Did the regulations require that that should be put in a poison bottle?

This question gave rise to considerable discussion, in which a very clear difference of opinion was revealed as to whether a mouth-wash could be spoken of as an application for *external* use. Some maintained that it must be regarded as an *internal* application, while others maintained that internal applications were those only which passed into the stomach. The point was left undecided. The general opinion was that the laudanum should be sent out in a plain bottle.

Mr. Brown said he would like to ask a question about the sale of arsenic for use in sheep dipping. Farmers very frequently strongly objected to having it coloured. He would like to know if it could be sold uncoloured in large quantities? Farmers complained because it was proposed to colour it, and declared that they could get it elsewhere uncoloured.

Several members said it could be sold in quantities of not less than 10 lbs. without colour. It was pointed out, however, that that concession only applied when the arsenic was "Not for use in agriculture," and that, therefore, it must always be coloured when sold for sheep dipping.

The Chairman and Mr. MacPherson argued that sheep dipping did not come within the meaning of the word "agriculture." An interesting debate took place on this point. It was argued that though, strictly speaking, the rearing of sheep was not agriculture, it must be intended to include that in the Arsenic Act, 1851. That Act was intended chiefly to regulate the supply of arsenic for sheep dipping purposes, and it must be assumed that the Legislature had the purpose in view when passing the Act. It was pointed out that if agriculture did not include sheep dipping then that would have a very far-reaching effect on the application of the recent order scheduling liquid preparations of carbolic acid. Many preparations of carbolic acid were sold for use in the treatment of animals on farms, and if that did not come within the words "agricultural purpose," they would all be poisons, which could only be sold by registered chemists, and must be labelled poison. In the discussion the order scheduling carbolic acid was strongly condemned as entirely illogical and absurd. The looseness of its provisions in regard to the sale of so deadly a poison as carbolic acid was contrasted with the stringent regulations governing the sale of arsenic.

Mr. MacPherson said he agreed with Mr. Boa. They should avoid unnecessarily restricting the sale of poisons. They should be guided by the Act, and its provisions and regulations should be liberally construed. Unless there was some distinct objection it was but right that they should supply any poison that was required by the public. In regard to articles in Part 1 of the Schedule they should be sold in strict conformity with the conditions imposed. There had been many illustrations of the dangers attending a loose observance of these precautions. The case of Dr. Lamson was one in point. He was supplied with aconitine across the counter merely on his own representation that he was a medical man. It was a large firm who supplied him; had it been a smaller man he would probably have been severely handled by the coroner. With regard to the poison regulations generally there were many points on which they were rather puzzling, and he thought they very much required to be overhauled by some competent person. But so long as they remained they should be complied with. For instance, they might sell laudanum itself in a plain bottle; but if they made a lotion containing a small quantity of laudanum in water they must put it in a poison bottle and mark it not to be taken. Then, in the case of carbolic acid, they might send out the 90 per cent. liquefied carbolic acid in a plain bottle; but if they sent out a carbolic lotion with more than 3 per cent. it must be in a poison bottle and marked not to be taken. Pure carbolic acid did not even require to be labelled poison. He thought all that was most absurd and should be rectified. Mr. Boa spoke about not putting obstacles in the way of educated people, but they could not legislate exclusively for educated people. One law must apply to all. The ignorant and prejudiced comments of coroners, who were often very bumptious, was a sore point, and did much injury unjustly to chemists and druggists. He was not sure if the Council could do much. Perhaps a timely letter from Mr. Bremridge now and again might do good by way of restraint.

Mr. Hill said three points had been made clear in the discussion. In the first place it was the duty of legally authorised poison sellers to keep a stock of such poisons as were required by the public in the district in which they were located. He did not think they were bound to sell these poisons to all who applied. That was left to their discretion as trained sellers. But if they refused to stock any of them the public would seek to get their wants supplied in some other way. In the second place there was room for taking particular care that in all cases the existing provisions of Section 17 were carefully attended to. He referred more particularly to the supplying of articles coming under the restrictions of Part 1 of the Poison Schedule. In the third place it had come out very clearly in their discussion that the moment they began to apply practically the mechanical restrictions on the sale of poisons embodied in the clauses of an Act of Parliament or in regulations passed pursuant to the Act they landed in difficulties, impracticabilities, and absurdities. He was convinced that it was utterly impossible to lay down, in any Act of Parliament, the detailed conditions that must be applied to all sales of substances deemed to be poisons. The attempt to do so frustrated the very purpose of such precautions, and made them ridiculous. All experience proved this to be so. The true and only efficient line of policy was to make certain that the persons entrusted with the distribution of poisons to the public, for any purpose whatsoever, were duly trained, and possessed a competent practical knowledge. All merely mechanical restrictions should be reduced to a minimum, and the sale carefully restricted to the properly qualified persons. Each trained seller should be left to exercise his own judgment and discretion as to the best precautions to be adopted in each particular case. Experience had shown that that was the only real way of avoiding difficulties and securing the safety of the public. It was also the only safe way in which needless interference with the adequate supply of public wants in the matter of poisons could be obviated. There was a natural tendency to think that imposing statutory mechanical restrictions was a safeguard against accident, but experience proved that that was an entire mistake. The proper education of the authorised seller was the only true safeguard. In any attempt to overhaul the existing regulations this point should be steadily kept in view. No more mechanical restrictions should be introduced. The existence of the present ones was a standing obstacle to the extension of the efficiency of the poison schedule.

Prescriptions for Poor Patients.

Mr. Henry said he brought this subject before the Association because he thought the younger generation of medical men especially did not seem to be aware that there was a custom among chemists to make a substantial reduction in dispensing charges in the case of patients who were financially unable to pay the ordinary rates. He was afraid medical practitioners, not knowing of this practice, were sometimes in the habit of sending patients to places where medicines were reputed to be sold cheap. It was quite common about twenty years ago for prescribers to mark such prescriptions with the letters "P.P." or "Ex." as a guide to the dispenser to make an abatement in the charge. It was not common to find that done now, and he suggested that a circular might be sent to the medical profession in their district reminding them of this arrangement.

Owing to the lateness of the hour it was agreed to defer this subject, and also a proposal as to the Federation of Local Associations to next meeting.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION.

At a meeting of this Association, held in the Pharmaceutical Society's house, 36, York Place, Edinburgh, on Wednesday, March 26, Mr. J. G. SCLATER, President, took the chair, and Dr. J. GORDON SHARP read a paper on

DOSAGE.

He said: The ordinary rule as to age is known to you all I presume. The dose for one year is generally reckoned as one-twelfth or one-thirteenth of the adult dose. Take the twelfth. This gives the age in years as numerator and denominator, but to the denominator twelve is added. If we take the dose for two years as an example we get an equation $\frac{2}{2+12}$, and if we work this out we find the dose for two years is one-seventh of the adult dose. Like all rules, it has exceptions, for the undeveloped nervous system of the child cannot be relatively compared by any fixed denominator. However, we may lay it down as a law, with exceptions, of course, that drugs whose constitution is simple are well borne by children. Mercury and its preparations, most metallic preparations, the halogen preparations, and some of the alkaloids, particularly the mydriatics, are tolerated by the young child in relatively large doses. Opium and morphine, on the other hand, are commonly cited as not being well borne by children. This statement requires some explanation and modification, for opium can be safely given to children in proportions gauged by the ordinary adult dose, but one cannot with safety go outside the ordinary proportionate dose. Let me illustrate this by quoting the ordinary adult dose of tincture of opium for repeated administration—namely, 5 to 15 minims. A child of two years might with safety be given two minims, that is roughly the seventh of 15 minims. But adults often get much larger continued doses, but the seventh of this larger dose would hardly be safe to administer to a child of two years.

The female dose is rather less than the male dose. Some drugs which act well in women affect men much less so or in a different manner. Bromide of potassium is one of these. Chloral acts more certainly in women than in men. Strychnine often acts powerfully on women, and has to be administered with greater caution. Opium acts in smaller doses in women, and is not so apt to upset the digestive organs as in men. Quinine oftener causes annoying symptoms in women than in men. Women are often highly susceptible to the simplest bitters, but women stand purgatives and iron better than men.

There is a racial peculiarity even in drug taking. The Scot has not been nurtured in the lap of luxury, and heroics and superlatives extend to his drugging. I hardly think English people could or would stand the large doses of colocynth pill and Gregory's mixture I have recollection of. We hear of the decay of England. The critics must mean England only, not including Scotland as they sometimes erroneously do, for I am sure if Scotia continues to dose herself as heroically as of yore, her end is not yet.

Climate has an important effect on the action of drugs. In tropical countries quinine is prescribed in much larger doses than could be tolerated in cold or temperate regions, and ipecacuanha can be given in larger doses without causing nausea.

In some persons drugs comparatively harmless to the generality of mankind occasion disagreeable and alarming extraneous symptoms. Quinine gives rise to nettlerash or headache; strychnine to headache and sleeplessness; the mydriatics, in minute doses, to painful dryness of the throat and irritating red rash; antifebrine may cause head symptoms; sweet spirit of nitre I have seen cause vomiting and retching. Indian hemp is one of those drugs which readily upsets, often producing a series of alternating bright and gloomy hallucinations, so graphically described in a paper by one of your own members some years ago. Indeed, genuine individual peculiarity to small doses of certain drugs is so varied, so inexplicable, and so humorous that it almost borders on the romantic, and a fascinating chapter might be written on the subject.

You will observe I have said nothing about varying doses for varying body weight. I have not found that a man of nine stones needs less dosage than a man of sixteen stones, although it is sometimes contended that we should pay attention to this circumstance.

I now go on to speak of larger doses than those ordinarily prescribed. In the preface to the Pharmacopœia it is said: "The doses mentioned in the Pharmacopœia are intended to represent the average range in ordinary cases for adults. They are meant for general guidance, but are not authoritatively enjoined by the Council. The medical practitioner must act on his own responsibility as to the doses of any therapeutic agents which he may administer." This practically leaves the medical man free to do as he likes, and should his practice be called in question it is difficult to see how any charge could be sustained against him. But it may reasonably be asked, how is the dispenser to know the mind of the practitioner if he receives a prescription containing doses larger than those given in the Pharmacopœia? Has the prescriber made a mistake, or does he really mean the large dose? If the dispenser communicates with the prescriber, he may be snubbed by a coxcomb (there are such among us), and none of us likes to be snubbed. I think the Pharmacopœia Committee might insert a paragraph in the preface asking prescribers to make distinctive marks when they intentionally order larger doses than those given in the Pharmacopœia. Liquid extract of ergot, the dose of which is 10 to 30 minims, is occasionally prescribed in 2 or even 4 drachm doses. The solutions of arsenic are likewise often administered in doses far in excess of the 2 to 8 minims, as much as 30 or 60 being prescribed in St. Vitus's dance in children. The 5 to 15 minims of tincture of digitalis may, in alcoholism, mount up to 60 minims. Ipecacuanha root in powder is prescribed in tropical countries in 30 or 60 grain doses every hour for five or six doses in dysentery, and now and again one has to give it in this country to patients who have lived in the tropics. I can well remember with what dismay I first regarded a prescription for six powders of powdered ipecacuanha root of one drachm each.

When we first start prescribing or dispensing one thing is a source of trouble to us, and that is the calculations. Apothecaries' weights and measures we have off by heart, but we forget about the 8 drachms to one ounce. Many believe all our difficulties would vanish if we only adopted the metric system. Are we ever likely to dispense our prescriptions by metric system? The man who likes to pose as a scientist has long ago settled the point to his own satisfaction, and his decision has been delivered in no terms of praise to the Briton, and yet we make no move towards this ideal system.

Being a decimal system, it is easy of multiplication and division as compared with our clumsy system, but as far as I can read mistakes in dispensing are not unknown in Germany, which is the adopted home, if not the birthplace, of the metric system. The very clumsiness of the Apothecaries' system may be a safeguard, because in making calculations one has always to be on the watch. Whether it is this or the superior intelligence of British pharmacists, it is pleasing to record that dispensing mistakes are few. After everything has been said against us as to our slowness and dulness in taking up and comprehending new methods, our most determined opponents will admit we are a practical people. If it had been evident to us that the adoption of the metric system was to be of material advantage in the actual practice of medicine and pharmacy, we should ere now have been deep in the mysteries of the cubic centimetre. The American people are nothing if not up-to-date, and they do not enforce the metric system in the dispensing of prescriptions. The metric system is authorised by Act of Congress, as it is amongst us by Act of Parliament. The United States of America and Great Britain are now the only civilised countries not employing the metric system. After all, we are further advanced than all the other countries, for we know both systems. In your analytical work you employ the metric system, and I am certain there is not an apprentice in the smallest village in Scotland but could dispense a prescription be the weights and measures Apothecaries' or metric. Could the same be said of the average British medical man? I am afraid if you asked the younger generation to write their prescriptions according to the metric system there would be strange things to reveal if you forced the dispenser to tell all the truth. There is something to be said for the old system, and seeing you not only know a system that has been practised so long in dispensing, but also know the system employed on the Continent, no one has any right to look upon British pharmacy as being old-fashioned in this respect.

After this digression I pass on to notice large doses given intentionally or otherwise. It is often a subject of surprise to the bedside observer what large quantities of certain potent drugs can be administered with very little evident action. In shock due to injury or following operation as high as half a grain of strychnine hydrochloride is often given hypodermically in two or three doses rapidly repeated without symptoms of poisoning, and some surgeons have gone beyond half a grain and given nearer a grain. Now half a grain is over seven times the maximum B.P dose. Thyroid extract is in great demand to-day, and we find the 3 to 10 grain dose greatly exceeded. Dr. Beatson, of Glasgow, has given as high as 250 grains of Hutchison's thyrocol daily, and has continued the treatment for some time.

Sodium salicylate is often prescribed in excessive doses if we are to take the B.P. as our standard. As high as 130 grains have been taken at one time with no more serious symptoms than sleeplessness resulting.

Strophanthus is looked upon as a potent drug, and so it is when injected under the skin, but when taken by the mouth it is perhaps as rapidly eliminated as it is absorbed. In the *Pharmaceutical Journal* of 1897 two instances of large doses are given. A man took two fluid ounces of tincture of strophanthus, at the rate of 50 measured minims three times a day, and when the bottle was empty he went to his chemist and asked for more. A woman took one fluid ounce of the tincture in twenty-four hours at the rate of a teaspoonful every three hours, and was no worse for the performance.

A lady patient of my own, aged eighty, who had a prescription for 20 grain phenyl salicylate (salol) powders, despite all remonstrance, never took less than 20 grains a day for months, and on many occasions, when her neuralgic pains were more than usually severe, she has taken six powders one after the other—that is to say, she has taken 120 grains in the space of six hours. No evil effects resulted from these large doses such as might have been expected in a person of her years.

When I was in the ranks of pharmacy one of my local medical men believed in big doses, and he was a very bad or careless penman. On one occasion he wrote a prescription for presumably three drachms of acetate of potassium and fresh infusion of digitalis to six fluid ounces. The drachm sign had an extra curve, and it really looked like the ounce sign, and so the dispenser interpreted it. The dose was one tablespoonful. It was repeated several times before the accuracy of the reading was called in question by the principal, who happened to be present on one occasion when the bulky three ounces of the salt was being weighed on the large scales. The patient was not expected to recover from the disease he was labouring under, but he deceived the doctor. The heroic doses of the acetate may have decided the balance in his favour.

I had intended not to say anything about the dosage of the Pharmacopœia, but I have changed my mind, and will now say something on the subject. I have in my possession a copy of the Pharmacopæia of the Royal College of Medicine of Edinburgh, published in 1809, and dedicated to George III. It is a small book, such as would please the student. Besides being small, it has one better quality than this from the student's point of view—it has no doses to rack his memory. However, to be honest with the student, I think I must tell him that from the beginning to the end it is written in Latin—this piece of information may not please him so well. The first British Pharmacopœia was published in 1864, but it was received with such hostility that to-day the General Medical Council has not recovered its equilibrium. The 1867 Pharmacopœia held the field for eighteen years, and although it was not so good as might be it was a great step in advance. Its dosage was such a jumble as would frighten the student of to-day. Of law and order there was none, and the man of twenty years ago who could rattle off all the doses will never have credit done to his memory. Let us pass over as lightly as may be the failings of the 1885 Pharmacopœia. It has gone to its rest, and peace be to its ashes—if it had any substance left to make ashes after the rank and file of pharmacy had done with it. Coming to the 1898 edition everyone must admit progress was made in the science and art of Pharmacopœia making. Improvements could be made and have been suggested, but, on the whole, a bold attempt has been made at uniformity in dosage. This better system is no doubt due to the larger measure of representation which pharmacy has had in the compilation of the work. Pharmacy should be largely and directly represented on the Pharmacopœia Committee, for the book concerns the pharmacist even more than it does the medical man. I am sure there are many medical practitioners who have not yet seen the inside of the 1898 Pharmacopœia, but I question if you could find one pharmacist of whom the same can be said.

The division of the tinctures into those having a dose of 5 to 15 and those having a dose of 30 to 60 minims, and the extracts into $\frac{1}{4}$ to 1 and 2 to 8 grain dosages, and other like arrangements save the student unnecessary memory work. The Minor student of twenty years ago would have hailed such an arrangement with a delight unknowable to you. Another wise step is in giving the amounts of single and repeated dosages. I should like to see some of the doses increased and the strength decreased of powerful drugs. This would make it more easy to do right and more difficult to do wrong. So far as I can see there is no reason why the arsenical preparations should not be ten times weaker; the same with the solutions of atropine sulphate and strychnine hydrochloride. No one ever thinks of administering Fowler's solution or Donovan's solution undiluted. The official solution of atropine sulphate is not employed in eye work, and not one man in a hundred uses the official strychnine solution hypodermically. Both are employed internally in treating general diseases. Our desire must be to make the Pharmacopœia useful and its preparations as safe as we can in the use thereof.

Mr. William Lyon then read a paper on

Research Work and Pharmaceutical Advancement.

At the conclusion of the paper, which was printed in last week's Journal, at page 269,

Mr. Dott said there was one point in which he did not quite follow what Dr. Sharp had said. That was in regard to the analogy between morphine and pepsine. He would expect morphine to be oxidised in the tissues, and could not see how it would be available for continuous use. With regard to Mr. Lyon's paper, he agreed with most of what he said. He was not sure that much of what was done by the large manufacturers could be called pharmaceutical advancement. It was very doubtful if the tabloid form was the best for the administration of many medicines. Many of the preparations sent into the market were rather to be classed as pseudo-scientific quackery. That was true even when they had what purported to be medical certificates.

Mr. Hill said the point that struck him most in Dr. Sharp's paper was his advocacy of teaching what might be called the theory or science of dosage. Pharmacists were always kept back from doing much in that direction from a feeling that they might be trenching on the sphere of the prescriber. That feeling was due to the restriction imposed on their pharmaceutical examinations by the Pharmacy Act of 1852, which excluded therapeutics or anything implying the theory and practice of medicine. But they were required as pharmacists to know a good deal about dosage. They were examined on it. There had been great advances in the science of dosage since the passing of the Act of 1852. At that time it was to a large extent empirical, but now it was for the most part founded on a thoroughly scientific knowledge of the action of drugs. He thought it would be an immense advantage to pharmacists to have a knowledge of the scientific basis of dosage, and therefore the suggestion of Dr. Sharp was well worth consideration. Mr. Lyon had given them a large amount of very good and proper advice. Advice was sometimes nauseous, but he hoped no feeling of that kind would prevent their getting the benefit that could be got from such a paper. For the most part his suggestions really embodied what had been the distinctive work of the Association for twenty-four years. That work had been in great measure successful, and had been recognised in reports to the General Medical Council and embodied in the latest edition of the Pharmacopœia.

Mr. MacPherson said he observed that Dr. Sharp rightly laid stress on the fact that there were no hard and fast rules that could be applied to dosage when dealing with human beings. Another point was the suggestion that prescribers should, when ordering an abnormally large dose, make some distinctive mark for the guidance of the dispenser.

Mr. Hutcheon said Mr. Lyon referred to those who took an interest in political work, but he would find that these men also took an interest in the scientific work of pharmacy. In regard to the training of apprentices, he thought they should go in for Mr. Tocher's scheme, and then they would get a compulsory curriculum, and that would secure the kind of training they required.

Dr. Sharp and Mr. Lyon briefly replied, and were awarded a cordial vote of thanks, as was also Mr. Hill, who had arranged the meeting.

WAKEFIELD AND DISTRICT CHEMISTS' ASSOCIATION.

The formation of the Wakefield and District Chemists' Association was celebrated by an inaugural dinner, held at the Strafford Arms Hotel, Wakefield, on Wednesday evening, March 19. The chair was taken by the President, Mr. W. Pollard, who was supported by Messrs. W. R. Maud, Vice-President (Pontefract), R. C. Walshaw (Huddersfield), A. H. Waddington (Bradford), J. Wood (Barnsley), N. S. Pickard (Ossett), and a good attendance of members, although, chiefly owing to illness, the number was not so large as it otherwise would have been.

"The Pharmaceutical Society" was proposed by Mr. J. Judge, in the absence, through illness, of Mr. A. Billington, and responded to by Mr. J. H. Chaplin, the Divisional Secretary.

Mr. A. H. Waddington, in proposing the toast of "The Wakefield and District Chemists' Association," congratulated the members on its successful inauguration. Speaking of the suggested formation of a Federation of the Local Associations of the West Riding, he referred to the misunderstanding which had arisen between the Dewsbury and Bradford Associations, and explained that the attitude of the Bradford Association was not taken out of antagonism to the proposal, but simply from a desire to know more fully its objects before taking any definite action in the matter. He was in favour of such a Federation, the object of which should be to influence and foster the work of the Pharmaceutical Council.

Mr. W. R. Maud, in responding, remarked that the Association had no history to talk about, though it might make some in the future. He referred to the benefits to be derived from such associations, especially by chemists in small towns and outlying districts.

The toast of "Kindred Associations" was proposed by Mr. A. R. Briggs (Horbury), and responded to by Mr. R. C. Walshaw, who, in the course of his remarks, said he thought that membership of the Pharmaceutical Society should be compulsory on all qualified chemists, who should have to take out a certificate before commencing business.

Mr. N. S. Pickard also responded. He enumerated the benefits to be derived from combination, and said the West Riding was now as strong in local associations as any part of the country. He ascribed the dearth of apprentices to the low salaries obtainable in the trade, and drew a very unflattering comparison between the remuneration of a skilled artisan and that of a fully-qualified chemist.

Mr. T. C. Whaley, who proposed "The Visitors," thought the scarcity of apprentices was not an unmixed evil, as the trade was at present overcrowded.

In the absence of Mr. Wood, who had left to catch his train, the toast was responded to by Mr. A. H. Waddington. The speaking was agreeably interspersed with songs by Messrs. N. S. Pickard and C. S. Fletcher, who were accompanied by Mr. C. W. Duffin.

Obituary.

Bell.—On March 24, Henry Bell, Chemist and Druggist, Hull. Aged 46.

Carruthers.—On March 24, Matthew Crowden Carruthers, Chemist and Druggist, Gravesend. Aged 25. Mr. Carruthers had been a member of the Pharmaceutical Society since 1900.

Forster.—On March 26, Arthur William Forster, Chemist and Druggist, Norwich. Aged 41. Mr. Forster had been connected with the Pharmaceutical Society as student, associate, and member since 1877.

Hawley.—On March 25, John Hawley, Chemist and Druggist, Aigburth. Aged 68.

King.—On March 25, Thomas Howes King, Chemist and Druggist, Amersham. Aged 70.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

PURPUROGALLIN. A. G. Perkin and A. B. Steven state that the formula of purpurogallin is most probably represented by $C_{11}H_8O_5$. The tetra-acetyl compound, $C_{11}H_4O_5(C_2H_3O)_4$, melts at 182°-183°, and the tribenzoyl compound, $C_{11}H_5O_5(C_7H_5O)_3$, which occurs in minute colourless prisms, melts at 213°. Analyses of the dibromo-compound, $C_{11}H_6Br_2O_5$ (m.p. 204-206°), and the monopotassium salt, $C_{11}H_7O_5{\cdot}K$, which forms minute, brown-violet needles, point to the correctness of the suggested formula. Hooker obtained purpurogallin from gallic acid by the action of nitrous acid. If, however, potassium ferricyanide be employed in conjunction with potassium acetate, a small quantity is formed of a new compound, which crystallises in minute, orange-red needles, and appears to be purpurogallin carboxylic acid, $C_{11}H_7O_5{\cdot}CO_2H$.—*Proc. Chem. Soc.*, **18**, 74.

PREPARATION OF SULPHAMIDE. E. Divers and M. Ogawa have now proved that sulphamide is one of the products of decomposition of ammonium amidosulphite. The yield is 10 per cent. or more, and the sulphamide is accompanied by no substances which are difficult to remove. Ammonium amidosulphite is slowly heated to, and then maintained at, a temperature of about 70°, so as first to decompose the salt and then to destroy much of the thionic compounds which accompany the sulphamide. The product is dissolved in water, and practically everything but ammonium amidosulphate is separated from the sulphamide by treating the solution with barium hydroxide and with silver nitrate. With some simple precautions, necessitated by the presence of the amidosulphate, the sulphamide is precipitated as silver salt and recovered from this, almost as Traube directs.—*Proc. Chem. Soc.*, **18**, 71.

HYPOIODOUS ACID. R. L. Taylor refers to the results obtained by Orton and Blackman, who found that the solutions obtained from iodine and mercuric oxide contained only a small quantity of hypoiodite, and that the iodine was chiefly present as iodate. That was contrary to the results previously obtained and described by the author, who used aqueous iodine (1 part in 5,000) and obtained 80 to 90 per cent. of the possible amount of hypoiodite. He has experimented further, and finds that the proportion of iodine existing in the filtrate as hypoiodous acid increases with the fineness of division of the iodine, while it diminishes as the proportion of iodine to the water employed increases and with the time occupied in shaking and filtering. Using powdered iodine (about 2 parts to 1,000 of water) and occupying fifteen minutes in shaking and ten minutes in filtering, the author obtains results not very different from those of Orton and Blackman; but using precipitated iodine with the same proportion of water, and taking only a little over a minute in shaking and filtering, the filtered liquid contained 44 to 52 per cent. of the possible amount of iodine as hypoiodous acid, while of the total iodine in the filtered liquid 90 to 95 per cent. existed as hypoiodous acid and only 5 to 10 per cent. as iodic acid. The solution of hypoiodous acid decomposed very rapidly, beginning to turn brown, owing to the liberation of iodine, almost immediately after filtering, unless a very dilute solution of iodine was employed. All the operations must therefore be performed very quickly. The filtered liquid always contains a little mercury, but there is so little present, as mercuric hypoiodite, that a considerable proportion of the iodine must exist as hypoiodous acid.—*Proc. Chem. Soc.*, **18**, 72.

ELECTRICAL RESPONSE IN PLANTS. Professor J. C. Bose read a paper at a meeting of the Linnean Society, held on March 20, on electric response in ordinary plants under mechanical stimulus, and performed a series of experiments showing electric response for certain portions of the plant organism, which proved that as regards fatigue, behaviour at high and low temperatures, the effects produced by poisons and anæsthetics, the responses are identical with those hitherto held to be characteristic of muscle and nerve and of the sensitive plants. He drew the final conclusion that the underlying phenomena of life are the same in both animals and plants, and that the electrical responses which he had demonstrated are but the common physiological expression of these.

MOLECULAR COMPLEXITY OF ACETIC ACID. H. M. Dawson finds that the considerable increase of the ratio in which acetic acid distributes itself between water and chloroform with increasing dilution is due to a gradual dissociation of the double molecules present in the latter solvent into simple molecules. The limiting concentrations at which distribution experiments have been carried out correspond to an almost complete change in the molecular complexity of the dissolved acid. At a concentration of 12 grammes per litre of chloroform, the acetic acid present in the form of double molecules is about five times as great as that in the form of simple molecules, whilst at a concentration of 0·1 gramme per litre the proportion is only one-fifth. The formation of double molecules by substances containing the hydroxyl group, when dissolved in liquids not containing this group, appears to be essentially dependent upon the concentration. — *Proc. Chem. Soc.*, **18**, 69.

EXALBUMINOUS FRUIT OF MELOCANNA. Dr. O. Stapf has read a paper before the Linnean Society on the fruit of *Melocanna bambusoides*, Trin., an endospermless viviparous genus of Graminaceæ, found in Bengal. The fruits of this singular grass are of the shape and size of small apples or inverted pears, usually terminating with a short or long beak, the longest measuring as much as five inches in length. They consist of a hard, thick, fleshy pericarp, which contains a great deal of starch stored in a parenchymatic tissue, of a testa developed as a nutrient layer and present in the mature fruit in an "obliterated" condition, and an embryo possessing an enormous ellipsoid scutellum which fills up the large central cavity of the pericarp, or is partly empty. The epidermis of the scutellum is developed as haustorial epithelium of the kind characteristic of grass-seeds, so far as it is in contact with the pericarp or, rather, the nutrient layer. It is traversed by numerous vascular strands which start from a plate of tangled strands in the axis of the embryo, and send out innumerable branchlets near the surface of the scutellum. The fundamental tissue in which the strands are embedded is delicately-walled parenchyma, full of starch. There is no endosperm. Germination starts while the fruits are still on the plant, and the young shoots may attain a length of as much as six inches, whilst a bundle of roots is formed simultaneously. During germination the scutellum acts on the pericarp as it acts in typical grasses on the endosperm, depleting not only the store of starch and other nutrient matter deposited in the cells of the parenchyma, but finally inducing also the partial solution of the cell-walls. This structure of the fruit of *Melocanna* is almost unique in grasses, and was not known before. It is probably repeated, although with some modifications, in the genera *Melocalamus* and *Ochlandra*, which the author intends to make the subject of another paper.

MYCLOCENE. Under this name, Dr. Chalmers Watson has employed with marked success bone marrow for the treatment of deafness due to certain forms of middle ear disease. It is prepared by extracting the marrow from healthy bones by means of ether, evaporating the solvent, and adding 1 per cent. of chloretone as a preservative. Successive extractions with ether sometimes afford fatty residues of different melting points, varying from between 120° and 130° F. to between 70° and 80° F. Only the fat of the lower melting point should be employed. It is used by instillation, ten drops of the warm myclocene being dropped into the ear at night; a small quantity being at the same time applied to the skin around the ear.—*Brit. Med. Journ.*, **1**, 699.

ALCOHOLIC SOLUTIONS OF PEPSIN. Eugène Thibault finds that alcohol, even when present in very small quantity, destroys, in time, the activity of pepsin, and that therefore weak alcoholic media are quite unsuitable vehicles for pharmaceutical preparations of the ferment. A solution of pepsin in a medium containing 11 per cent. of absolute alcohol, although found to retain its proteolytic action unimpaired the day after making, had lost 40 per cent. of its activity in two months, and was totally inactive in about four months. With slightly stronger alcoholic solutions containing respectively 14·7 and 29·3 per cent. of absolute alcohol the deterioration was markedly more rapid, the liquid, in the case of the strongest alcoholic solution, being inert the day after making. Although some brands of pepsin seem to be more resistant to the action of alcohol than others, all show marked diminution of their peptic activity after prolonged contact with weak alcohol. These results do not accord with the observations of Chassaing, who has recorded that solutions of pepsin were unaffected by contact for six months with alcohol 20 per cent., but the author points out that Chassaing employed saturated solutions of pepsin, such as are not met with in practice, and which were twenty times stronger than the elixir of pepsin of the Codex. It is found that in wines or elixirs, containing sugar and other foreign matter, this deterioration is less rapid than in the case of simple alcoholic solutions, but that it nevertheless takes place to a considerable degree.—*Journ. Pharm. Chim.* [6], **15**, 161.

DETERMINATION OF PHENOLS AND ALCOHOLS. A. Verley and F. Boelsing find that alcohols and phenols which only combine slowly with acid anhydrides in the cold become esterified almost immediately in the presence of pyridine, according to the equation—

$$R{\cdot}OH + (R'{\cdot}CC)_2O + Py = R{\cdot}O{\cdot}CO{\cdot}R' + R'{\cdot}COOHPy.$$

The method is applicable both to the formation of esters from alcohols and phenols, and for the determination of those bodies in essential oils. For the latter purpose a reagent consisting of a mixture of anhydrous pyridine, 88 Gm., and acetic anhydride, 12 Gm., is employed. From 1 to 2 Gm. of the alcohol or phenol-containing substance is heated for a quarter of an hour with 25 C.c. of the mixture, then treated with 25 C.c. of water, and the uncombined acid determined in the usual manner, with semi-normal alkali, the difference between the amount of acid thus found and that in a blank experiment gives the amount combined as ester. Satisfactory results were obtained with ethyl, amyl, and cinnamyl alcohols, phenylglycol, glycerol, phenol, β-naphthol, guaiacol, thymol, carvacrol, and santalol. Terpineol, vanillin, salicylaldehyde, benzyl alcohol and linalool gave no reaction. Geraniol only gave about 90 per cent. of the amount of the alcohol present, as shown by determination with phthalic anhydride. For menthol, a greater excess of acetic anhydride than the above was necessary to obtain quantitative results.—*Berichte*, **34**, 3,354.

QUERCETAGETIN. A. G. Perkin finds that the true formula of quercetagetin—which was first isolated from the flowers of the African marigold, *Tagetes patula*, by Latour and Magnier de la Source, as a yellow, crystalline substance—is $C_{15}H_{10}O_8$. The substance melts at 318°-320°, gives an acetyl compound, $C_{15}H_4O_8(C_2H_3O)_6$, in colourless needles, melting at 203°-205°, and dyes shades browner, though somewhat similar to quercetin, to which class of colouring matter it appears to belong. It contains no methoxyl group and on fusion with alkali gives protocatechuic acid and a phenol at present unidentified.—*Proc. Chem. Soc.*, **18**, 75.

ARTEMISIN. P. Bertolo has examined artemisin, which Merck has shown accompanies santonin in *Artemisia maritima*, and occurs in the mother liquors after separating the former compound. Artemisin, $C_{15}H_{18}O_4$, occurs in colourless crystals melting at 200° C. It combines with chloroform to form the compound, $C_{15}H_{18}O_4{\cdot}HCCl_3$, from which the chloroform is driven off at 80° C. When boiled with solution of soda it gives a carmine red solution, which is colourless when cold; by treating this with dilute H_2SO_4 artemisin is liberated, but if concentrated H_2SO_4 a new crystalline body melting at 170-171° C. is obtained. Artemisin acts as a monobasic acid, the silver salt having the formula, $C_{14}H_{19}O_3COOAg$. It gives with hydroxylamine the oxime $C_{15}H_{18}O_3NOH$, crystallising in white needles which melt at 233-234° C., and forms a semi-solid hydrazone with phenylhydrazine. Like santonine, $C_{15}H_{18}O_3$, from which it differs only in having one atom more oxygen, it contains a lactone and a ketone group in the molecule.—*Chem. Centrabl.*, **72** [2], 937.

CALCIUM SILICIDE. Woehler who first obtained calcium silicide described it as being attacked with difficulty by water. Later on Jacobs has stated that it is rapidly decomposed by cold water with the formation of silica, calcium hydrate, and hydrogen. Moissan and Diltney have now investigated the matter. In order to prevent the formation of silicate, an excess of silicon is necessary. A mixture of equal parts of lime and silicon is fused in a carbon tube in the electric furnace, the molten mass being left in contact with the carbon for as short a time as possible, to avoid formation of much calcium carbide, or, finally, carbon silicide. The melted mass when cooled is not homogeneous; the external portion consists of calcium carbide; then a whitish layer of crystalline calcium silicate is formed, and finally, in the middle, a brilliant button of $CaSi_2$ mixed with variable quantities of silicon. With the proportions above indicated an excess of silicon is ensured, since a considerable quantity of the lime used is converted into carbide or silicate. Calcium silicide thus obtained occurs in brilliant greyish crystals of a metallic aspect, having the sp. g. 2·5. It is permanent when heated to redness in hydrogen, takes fire in fluorine, is not attacked by chlorine in the cold, but ignites in a current of dry chlorine when heated to redness. Bromine and iodine behave in a similar manner. In the air it is superficially attacked only on heating, the temperature of the oxy-hydrogen blowpipe is necessary for its complete oxidation. It is also only superficially attacked when heated to redness in a current of oxygen. It is permanent in dry, and only very slowly altered in moist air; when powdered and placed in water it decomposes very slowly with the liberation of hydrogen. Cold gaseous HCl is without action on it; at a red heat it combines, forming calcium and silicon chloride. A concentrated solution of HCl in the cold, attacks it, forming hydrogen, silicuretted hydrogen, and Woehler's silicon. The dilute acid gives no silicuretted hydrogen, only silicon and hydrogen. Alkaline solutions and ammonia dissolve it with the evolution of hydrogen.—*Comptes rend.*, **134**, 503.

SHOULD PURITY BE THE PRIME CONSIDERATION.*

BY J. W. GAYLE, FRANKFORT, KY.

The question of the quality of drugs may be said to be of threefold importance, affecting in varying degrees the physician, the pharmacist, and the patient.

It affects the physician because he must depend upon the purity of the drug for the desired result. With an inferior drug all his efforts are futile; his skill goes for naught, and his reputation suffers.

It concerns the pharmacist because upon him rests the entire responsibility—a responsibility the gravity of which cannot be over-estimated nor participated in by either the physician or the patient. The druggist who fails to recognise this fact, or who is indifferent to it, should not be trusted to compound or dispense medicines.

It affects the patient most of all, because to him the question is always of serious importance, and frequently a matter of life or death.

As the responsibility for the quality of the drug rests solely with the pharmacist, three reasons will be given, attempting to show why "purity should be the prime consideration."

First—A Business Reason.—While the financial success of a retail druggist may not depend solely, nor even chiefly, upon the quality of his drugs, he will find it a matter of good business policy to adhere closely to the rule that purity of drugs is of much importance in securing and retaining a liberal share of public patronage. It may be said that those who adopt this practice, all other things being equal, meet with the largest measure of commercial success. In the matter of medicine the public wants purity first. A man may be persuaded to buy an inferior coat, a woman may even be sometimes persuaded to purchase a cheap gown; but neither will be induced to sacrifice quality for price by buying cheap or impure drugs. A temporary financial advantage will accrue to the retailer by handling inferior, and consequently cheap, drugs, but the public will learn sooner or later, directly or indirectly, whether or not the quality of drugs dispensed by a particular druggist is reliable; and slowly perhaps, but very surely, will a large class of trade leave those who indulge the hope that the public may be fooled all the time. As a matter of good business policy, then, it pays to make purity the prime consideration.

Second—A Professional Reason.—Someone has said that "The affairs of life hinge upon confidence." Certain it is that the extent and character of a retail druggist's patronage hinge upon, and become an index to, the confidence which is reposed in his professional integrity. In fact, the relation between a druggist and his patron is something more than that of confidence—it amounts, especially where the purity of the drug is involved, to an absolute trust. This trust is violated; and professional integrity is sacrificed if any other than drugs of the first quality are dispensed. This proposition is true as to the public, and true with particular emphasis as to the physician. The public may be imposed upon for a time—never ultimately, but it must be apparent to the most casual observer that to in any measure acquire and maintain the confidence of the physician, the dispensing of drugs of known purity is imperative. Hence it is that in order to establish and maintain that reputation and character for professional integrity without which a druggist is a professional failure, purity must be the prime consideration.

Third—A Moral Reason.—This is more binding than either of the foregoing; the great and controlling consideration which makes purity of the highest importance is the moral obligation, which, whether it is recognised or not, or whether it is discharged or not, every retail druggist assumes when dispensing or compounding drugs, to the effect that each individual item represented should be, so far as lies in his power, all that the most rigid standards require. This is tacitly demanded and justly expected of him by both the physician and the patient; and a failure to discharge this obligation, the more binding because it is understood, outrages the confidence of both. The question as to whether an article of inferior merit will answer is not for the druggist to determine. He should slavishly do his full duty. He who dallies with his obligation in this particular is guilty of the grossest misconduct. The effect of a failure to furnish the highest quality cannot be overcome by the most superior skill or the most painstaking accuracy.

The gravity of the position of the druggist is exceeded only by that of the physician. Frequently the slightest deviation from the rule under discussion is attended by the most serious consequences. It may be that in the case of disaster the blame is never fixed, but it rests, notwithstanding, unerringly upon him who, knowing, as he must know, the importance of the minutest detail, dares to trifle in the slightest with his moral obligation to make purity the prime consideration.

A NEW SWISS PHARMACOPŒIA.

BY ALFRED ROE.

The first edition of the Swiss Pharmacopœia was elaborated by the Swiss Pharmaceutical Society, and appeared in the year 1865; it was followed in 1872 by a second one, which was completed in 1876 by a supplement. During the years 1889 to 1893 this pharmacopœia was, by the orders of the Pharmaceutical Society, reviewed and altered, and appeared as the third edition about the end of the year 1893, in French, Italian, and German (the previous editions having been published in Latin), under the title of 'Pharmacopœa Helvetica.'

All the cantons, with the exception of Glaris, were willing to acknowledge the new pharmacopœia as the official one, the Federal Council then declared this as the national pharmacopœia, and made it legal in all the Republic, with the exception of Canton Glaris, for all prescriptions, the preparation and sale of medical articles, as well as for the delivery and supply of pharmaceutical preparations to the Swiss Army, the Customs, the Excise department, and the Federal Office of Health.

The opinion of the leading competent men (Commission permanente de la Pharmacopée, Société Suisse de Pharmacie, Commission Médicale Suisse) was that a new edition of the national pharmacopœia had become necessary. The Federal Council requested, during the past year, the governments of the different cantons to let them know if they were favourably disposed to acknowledge and accept, as the official pharmacopœia, a new edition when it appeared. All the cantons, including that of Glaris, answered in the affirmative.

That being so, the Federal Council has deemed it the duty of the Republic to undertake a work everybody considers desirable and necessary, and to bring it to a satisfactory conclusion as soon as possible.

The work, which will take about three years to complete, will be executed by an official committee, consisting of a pharmaceutical section of from nine to twelve members, a medical section of seven or eight members, and a working committee of five members, acting at the same time as an editorial committee.

The cost of this work to the Republic is calculated at £480, which will be divided between the three years' Budgets. The expenses for the third edition of the pharmacopœia were as much as £908 10s., owing in a great measure to its having been published for the first time in the three national languages.

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* Read before the meeting of the Kentucky Pharmaceutical Association, and reprinted from *Merck's Report.*

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

MEETING OF THE COUNCIL.

WEDNESDAY, APRIL 9, 1902.

Present:—

Mr. G. T. W. Newsholme, President;

Mr. C. B. Allen, Vice-President;

Messrs. Atkins, Carteighe, Cooper, Cross, Gifford, Glyn-Jones, Harrington, Hills, Park, Robinson, Savory, Storrar, Symes, Wootton, Young.

The minutes of the previous meeting were read and confirmed, and the President announced that he had received letters of apology for absence from Messrs. Corder, Harrison, Southall, and Taylor.

Mr. R. A. Robinson having been cordially welcomed to the Council,

The President referred to the

Death of Mr. William B. Randall,

of Southampton, who died on March 14, 1902, aged eighty. Mr. Randall joined the Society in 1845, and was a member of the Council from 1865 to 1869, a period that covered the historic efforts of pharmacy to secure legislative recognition, and which marked the establishment of the principle that sound poison law must be based upon the competent skill and knowledge of the seller. Mr. Randall was for many years a local officer of the Society, and was always a centre for the diffusion of loyalty to the calling and to its official embodiment. He was one of the oldest members of the Chemical Society, and manifested the keenest interest in the progress of chemical science. Outside his profession, too, he took an active part in promoting the educational and general advancement of his fellow citizens, and he was one of those pharmacists who by honesty, earnestness, and steadfastness of character succeeded in not only winning the regard of his townsmen, but in elevating in the mind of the public generally the status of the calling to which he belonged. He (the President) had received a communication from Mr. Peter MacEwan, who enclosed a letter which he had received some time ago from Mr. Randall concerning his apprenticeship, and he would like to read it to the Council. The letter was as follows:—

> My father and grandfather were both apprenticed by the Society of Apothecaries to one of their own members (for five or seven years, I forget which). This was then the only mode of entering the profession, and there was no examination. They were thus qualified medical men. I was apprenticed in the same way, but by that time qualification was obtained by "walking the hospitals," followed by examination. It was not thought well that I should take this course, and the Pharmaceutical Society being then set up, with Jacob Bell at its head, I became a member and pursued its policy, and I have continued its membership to the present time, and on the whole mostly approved of its doings. I used to attend its annual meeting, and usually spoke, which led to my being chosen on the Council, which I attended pretty regularly for some years, when it became more than I could do with local duties. I liked the meeting, especially when such men as Squire and Morson, sen., took part. I received the kindest treatment from all, and enjoyed dining after the meetings with Mr. Hills, at his house in Queen Ann Street, I think. He was a most genial host, and put every guest at ease. A local matter (chiefly educational) made large demands on me, and I had to give up the Council of the Society, though I did so with grief. I was interested in the controversy about "Inorganic Chemistry," and sympathise with the smaller druggists, who were in many cases struggling continually to get a very moderate living. I had to call on them throughout South Hants and parts near its borders (in our mineral water business), and so I got to know their circumstances. Afterwards I found this too much for me and deputed it to another. I had to work long hours, and now (at eighty), completely exhausted, being unable to walk without help, which some of my seniors in the town work can do with perfect ease and enjoyment.—W. B. R.

The President then moved the following:—

> That the Council regrets the death of the late Wm. B. Randall, a former member of the Council, and for many years one of the most esteemed local officers of the Society, and desires to convey to the family of the deceased respectful sympathy, together with the assurance that Mr. Randall's life services to his calling and to the Society will long be held in grateful memory.

The Vice-President seconded the motion. He had not the pleasure of intimate acquaintance with Mr. Randall, but on one occasion he had the opportunity of going over his premises at Southampton, and they showed evidence of being in the occupation of a pharmacist of the very highest intelligence.

Mr. S. R. Atkins supported the motion. Mr. Randall was a life-long friend, whose advice and assistance he valued very highly. He had attended the funeral, and was much impressed with the public recognition of Mr. Randall's high standing in the public life of Southampton.

The motion was carried.

Death of Honorary and Corresponding Members.

The President also stated that since the last meeting of the Council two honorary members of the Society had died, viz., Professor Hamberg and Mr. George H. Hawtayne. Professor Nils P. Hamberg, M.D., of the Pharmaceutical Institute, Stockholm, who died on February 13, 1902, aged eighty-six, was elected an honorary member of the Society in 1856, contributed to the *Pharmaceutical Journal*, and some years ago gave the results of a chemical investigation of the air in rooms covered with arsenical wall paper. Mr. George H. Hawtayne, C.M.G., F.R.G.S., who died on March 30 at Ramsgate, aged sixty-nine, had been a corresponding member since 18[illegible]2, was formerly Administrator-General of British Guiana, and in that capacity interested himself largely in the economic products of the district. He has furnished useful information to the Society, and was particularly imbued with the value of the Museum.

The Secretary was instructed to write to the families of the deceased conveying the sympathy of the Council.

Appointment of Mr. Robinson to the Library Committee.

The President moved, and it was unanimously agreed, that Mr. Robinson be appointed a member of the Library, Museum, School, and House Committee.

Government Visitor's Report on the Examinations in London.

The Secretary read the following letter from the Privy Council enclosing the report of the Government Visitor on the examinations held in London during 1901-2, which was published in the Journal for March 22 last, at page 245:—

The Clerk of the Council,
Privy Council Office,
London, S.W.,
March 13, 1902.

Sir,—I am directed by the Lords of the Council to transmit to you the accompanying copy of a Report by Dr. Stevenson on the Examinations held by the London Board of Examiners of the Pharmaceutical Society of Great Britain during the year ending March 31, 1902; and I am desired by their Lordships to request that you will be so good as to draw the special attention of the Council of the Pharmaceutical Society to Dr. Stevenson's remarks in the Report with respect to compulsory courses of instruction in at least Chemistry and Pharmacy being required.

I am, Sir,
Your obedient Servant,
A. W. FitzRoy.

The Secretary and Registrar,
Pharmaceutical Society of Great Britain,
17, Bloomsbury Square, W.C.

The President said that although the matter referred to by the Privy Council was of great importance and of immense interest to pharmacists, it was not new, for Dr. Stevenson had previously directed attention in his reports to the subject of a compulsory curriculum, and the Council of the Society had for some considerable time past been urging upon the Privy Council the desirability of having some compulsory course of training for pharmaceutical students. It was, he believed, in 1881 that the Council first directed the attention of the Privy Council to the matter, and at the present time the draft Pharmacy Bill, which had been submitted to the Privy Council, contained provision for a compulsory curriculum. Therefore, he moved that the Secretary be instructed to write to the Privy Council, directing attention to the communications that had been sent from the Council at different times concerning the matter referred to.

Mr. Hills thought it was very satisfactory to know that the Privy Council recognised the necessity of insisting upon some course of training for students of pharmacy, and it was especially important, as it confirmed the steps that had been taken by the Council.

Mr. Cross suggested that it would be well to notify the Privy Council that the draft Bill now in the pigeon holes of their department contains a clause which makes provision for compulsory training.

The motion was agreed to.

Election of Members.

The following persons, having tendered their subscriptions for the current year, were elected "Members" of the Society:—

Audsley, Benjamin; Featherstone
Bell, John H.; Graaff Reinet
Black, William J.; Tweedmouth
Booth, William: Tottenham
Britland, Arthur J. D.; Penzance
Brown, Alexander; London
Cairns, Frederic A.; Camberley
Cole, Reginald; Biddulph
Cox, John Wilfred; Leamington
Cuthbert, William Stiven; Glasgow
Fairweather, J. Y.; Broughty Ferry
France, James Hassall; London
Galbraith, Sarah A.; Bethnal Green
Godkin, Archibald A.; Folkestone
Gregory, Herbert Wm.; Bradford
Hole, James George; Dunmow
Jenkins, David; Bridgend
Lacey, Edgar Hiram; Clapham
Layland, John; Wrightington
Leadbetter, David A. B.: Lochgelly
Lunt, Godfrey F.; Manchester
Mackie, Alexander; Culter
Martin, W. E.; Aldeburgh-on-Sea
Mattock, William Henry; London
Mitchell, Herbert George; London
Nixon, Kenneth; Hucknall Torkard
Paton, Andrew Hunter; Paisley
Place, Edward Bland; Birmingham
Plenderleith, John W.; Edinburgh
Pritchard, Edward Thomas; London
Ransford, Arthur T.; Folkestone
Richards, Shelley; Shaftesbury
Rimmington, W.; Manningham
Roberts, William E.; Portmadoc
Robertson, Thomas M.; Rutherglen
Shuttleworth, John Henry; London
Thomson, Wm. John; Liverpool
Trenwith, Chas. Cowley; Bellshill
Turner, Frederick George; Kilburn

Election of Student-Associates.

The following persons, having tendered their subscriptions for the current year, were elected "Student-Associates" of the Society:—

Coultman, Matthew R.; Malton
Douch, Walter; Southborough
Hagyard, Robert J.; Scarborough
Hudson, Reginald A.; Cranbrook
Roberts, Herbert Chas.; Leicester
Shreeve, George Jas.; Lowestoft
Stonelake, Cecil; Guernsey
Tawell, Thos. Edwd.; Wakes Colne
Twidale, Herbert; Wisbech
Walker, Frederick G. C.; Kendal
Wellwood, Robert D.; Saltcoats
Wood, Harry Mayall; Hanley
Yates, Francis Harold; Blackpool

The names of the following persons who have severally made the required declarations, and paid the restoration fee of one guinea, were restored to the Register of Chemists and Druggists:—

Frederick Barry, Westbury-on-Trym, Bristol.
Harold Harper Greenfield, 7, Harland Road, Ecclesball Road, Sheffield.
John Hogg McOwat, Millerbank, Hill Street, Springburn, Glasgow.
George Senior, 445, Chester Road, Old Trafford, Manchester.

Several persons were restored to membership upon payment of the current year's subscription.

Nominations for Council.

The Secretary reported that the following *ten* members had been nominated as candidates for the *seven* vacant seats on the Council, and that all had expressed their willingness to accept office if elected:—

Campkin, Algernon S.; Cambridge
Carteighe, Michael; London
Glyn-Jones, William S.; London
Harrington, John F. London
Harrison, John; Sunderland
Morrison, John Wm. T.; Tring
Pickering, Charles Edward; London
Park, Charles James; Plymouth
Southall, Alfred; Birmingham
Young, John Rymer; Warrington

Auditors.

The Secretary reported that he had received the following *five* nominations for the election of Auditors, and that all the nominees had expressed their willingness to accept office:—

Butt, Edward Northway; London
Hodgkinson, Charles; London
Lescher, Frank Harwood; London
Umney, Charles; London
Yates, Francis; Surbiton

Finance Committee.

The report of this Committee included the following figures:—

	£	s.	d.
Balance in March	£3,172	17	1
Receipts	4,002	2	6
	7,174	19	7
Payments during March	2,568	9	4
	£4,606	10	3

Payments to the amount of £1,388 0s. 0d. for the current month were recommended.

The President, in moving the adoption of the report, mentioned that the Council had been very pleased to receive the sum of ten guineas for the Benevolent Fund from the Pharmacy Club. In reference to the Orphan Fund there was a sum of about £300 which it was desirable should be invested, and for that purpose it was proposed to purchase Consols; also in June next a sum of £30 would have to be paid to the Orphan Asylum at Watford.

The report was adopted.

Benevolent Fund Committee.

The report of this Committee included a recommendation of grants to the amount of £124 in the following cases:—

Former member (61). (Liverpool.)

Widow of a chemist and druggist (66). Has had previous grants. (Birmingham.)

Former member and subscriber (82). Has had previous grants. (Finchley.)

Widow of a member (76). Has had previous grants. (Highbury.)

Former subscriber to Society and Fund (60). Has had previous grants. (Horncastle.)

Widow of a chemist and druggist (69). (Liverpool.)

Registered chemist and druggist, who has had a previous grant (68). (Westminster.)

Widow of a member and subscriber (70). (Kensington.)

Widow of a chemist and druggist (70). (Medstead.)

One case was not entertained.

The Secretary reported the death of Mr. H. C. Burrows, of Syston, on March 20, aged 85, who had been an annuitant on the Fund since 1899.

On the motion of the Vice-President, the report was adopted.

Report of the Library, Museum, School and House Committee.

The report of this Committee read as follows:—

The Library, Museum, School and House Committee met on March 12, 1902. The usual monthly statements respecting the Society's Libraries and Museums in London and in Edinburgh were received, and particulars of these statements are published in the *Pharmaceutical Journal* for March 15, 1902.

The Committee dealt with various administrative matters relating to the superintendence of the School and House, and the proper and efficient conduct of the other departments of the Society, under the charge of the Committee.

The School Staff reported. Permission was given for the cup of the Inter-Pharmacy Football League—won by the School—to be kept in the Library during the ensuing twelve months.

The tender of Messrs. Saunders and Son for the supply of paper for the Journal for the ensuing year was recommended for acceptance by the Council.

The Committee made arrangements for the closing of the School and House during the Easter Vacation, and ordered the arrangements to be published in the *Pharmaceutical Journal.*

The Committee recommended that the usual annual cleaning and painting be done to the outside fronts of the premises of the Society.

The following remits from the Council were considered:—

I. A letter from Mr. Hagon, of Cardiff, asking for a reduction of the annual subscription to the Society in the case of members of the local association. The Committee desires it to be pointed out that the Council has no power to make such concessions, and that it would not be practicable to do so in any case.

II. A Resolution from the Executive of the N.B. Branch suggesting that candidates possessing leaving certificates be allowed to complete their examination by passing the remainder of their six subjects under any of the examining bodies recognised by the regulations. The Committee recommends that this suggestion be adopted by the Council.

III. A draft scheme (forwarded by the Executive of the N.B. Branch) for the promotion of University training for Scottish students, and for instituting a degree in pharmacy. The Committee recommends the official approval of the principle of the scheme, subject to the condition that the degree shall not be granted to any person who does not present a certificate stating that he is entitled to registration as a chemist and druggist.

The Journal Sub-Committee reported that it had conferred with the Editor on matters of detail connected with the production of the Journal, and had defined that twenty pages of text should be the limit of a normal number of the Journal.

The Committee sat as a Research Committee, and received reports from Professors Collie and Greenish.

The **President** moved that the report and recommendations be received and adopted. In doing so he wished to refer to one or two items mentioned. He was sure the Council was very pleased that the School football team had been so successful, and that the Inter-Pharmacy League Cup was now in the keeping of the club. With reference to the suggestions from the North British Branch Executive, he thought that, in regard to the leaving certificates, it was perfectly right and safe to accept and adopt the recommendation, because it would be just to candidates, and would not be any disadvantage to the Society. Then, with regard to the scheme for providing University training for pharmaceutical students, the Committee recognised and approved of the principle of the scheme, subject to the condition that only those who were registered chemists and druggists participated in it. The Committee had been considering the scheme for a long time, and, after most careful consideration, recommended that the Council should accept the principle of the scheme. Each member of the Council had received particulars of the scheme, hence its scope was doubtless familiar to them. The scheme, he thought, was worthy of support, and the pharmacists of this country owed a debt of gratitude to the author of the scheme, Mr. Tocher, for his great efforts in the matter. The object Mr. Tocher had in view was to raise the status of pharmacy to a better position. That was an object which the Council had been trying to attain for many years by urging students to avail themselves of the very best schools in their districts, and the very essence of the scheme under consideration was that pharmacists should avail themselves of the Universities. There was no doubt that if some kind of University education could be brought within the reach of pharmaceutical students it would be bound to improve the status of pharmacists as individuals as well as pharmacy as a whole.

Mr. **Storrar** thanked the President for the manner in which he had proposed the motion before the Council, and the Committee for the recommendation that had been made concerning Mr. Tocher's scheme. After what the President had said, it was hardly necessary for anything further to be said in support of the scheme, but there had been criticisms which he thought should not pass unnoticed. He believed that the scheme had been misunderstood. The principal object was to give to those students who choose a University training the hall-mark of a University. He thought that was a very desirable thing, and that it would be a very great advance in the training of the pharmacist. There was no doubt that a certain amount of business training was requisite over and above the scientific training, but he was of opinion that the only chance of the legitimate pharmacist in the future will be in his ability and efficient training. That was the only way in which the present illegitimate competition could be met. If the scheme under consideration could be carried through in Scotland there appeared to be no reason why it should not be carried through in England also, and the pharmacist would be a better trained and, he hoped, a more successful man. With reference to the attitude of the North British Branch Executive in the matter, he was decidedly of opinion that the Executive would have neglected its duty if it had not tried to get the benefit of the Carnegie Trust. Then, in regard to the degree in pharmacy, he did not think it was necessary to say a single word in defence of that. Surely it would be for the benefit of each individual pharmacist to have a University degree within reach of every pharmaceutical student. A point which should be emphasised was that it was not proposed that the whole training should be in a University; the Pharmaceutical Society would not insist upon a University training, it being a purely optional matter. With respect to the idea that the scheme was purely a Scottish one he might say that it was not a selfish scheme at all. The Scotch student would certainly get the advantage of the Carnegie Trust, but he would point out that it was only possible to carry the scheme through with the aid of the Carnegie Trust, because the Universities could not afford to establish suitable lectureships otherwise. Personally, he hoped the scheme would be carried through, and if it was he was sure it would not be confined to Scottish students.

Mr. **Glyn-Jones** said he was sorry that, as a member of the Library Committee, he had been compelled to leave the meeting before the matter under consideration was dicussed. He would have liked to be present, because he might perhaps have come to the conclusion that it would be quite safe for the Council to express its approval of the scheme, but he must say that he could not take up that position. If the Council did express its approval, it meant that the Society would go cap in hand to the Universities and ask them to set up a degree in pharmacy. Mr. Storrar had referred to the University hall-mark for pharmacists, but, in his opinion, no case had been made out for such a hall-mark. If the pharmacist desired a degree it was quite open for him at present to take a science degree. The Council would, he thought, be taking a very unfair step against the Major man in approving of the establishment of a B.Sc. degree in pharmacy, because in effect it would be equivalent to expressing the opinion that its own honorary diploma is not sufficient hall-mark of efficient pharmaceutical training. He did not think that, apart from the Carnegie Trust, the establishment of a degree in pharmacy would have been attempted. He was told that there was a stipulation that this degree was not to be granted to any persons who had not passed the Minor. He thought it would eventually mean that either the Universities would have to throw over that condition or take over the Minor Examination. He did not consider that the necessity for a B.Sc. Pharm. had been established; such a degree would be a source of danger; therefore, he moved that the matter be remitted to the Committee for further consideration. If, however, the Council decided to approve of the principle of the scheme, he should much prefer that the condition in reference to the Minor Examination be left out.

Mr. **Carteighe** gave the scheme his hearty support. He only wished that the people of England would do as the people of Scotland did, viz., make the Universities the great highway to every profession and calling. With regard to Mr. Glyn-Jones's objections, he did not think there was very much in them. He, personally, would be only too glad to find that there was so much interest taken in pharmacy outside that there was a desire to take over the examinations. He thought no one would question his loyalty to the Society, but in regard to the establishment of a B.Sc. degree in pharmacy he should be the first person to say: "Don't examine another Major man." The great point about the scheme of the Carnegie Trust was that every Scotch student who could pass a preliminary examination would get an opportunity of securing an efficient training. At present the very process of examination often made a man less efficient, but under this scheme students would get a training which was worth all the examinations, and from what he knew of Scotchmen he was sure they would take advantage of it. He only hoped the scheme would be carried through, and that it would stimulate some philanthropic Englishman to do likewise for students in the South. He had no fear that the Pharmaceutical Society would lose by supporting Mr. Tocher's scheme.

Mr. Hills also supported the motion of the President. He was very glad that the members of the Committee had come to the conclusion they had. The strongest point in Mr. Glyn-Jones's remarks was that in reference to the condition respecting recognition of the Minor Examination. He personally had some little doubt as to whether the Universities might accept that condition. If they did accept it he thought one of the greatest difficulties would be got over. In regard to the Scotch *versus* English aspect of the matter, he hoped that if the scheme were carried through it would serve as an object lesson to philanthropists south of the Tweed. He thoroughly endorsed what Mr. Carteighe had said, and he should hail with delight any means by which they might get a curriculum on University lines. The very fact that pharmaceutical students would mix with other University students was a training in itself. He thought the hearty thanks of the Council were due to Mr. Tocher for putting the scheme into such a concrete form, and he wished the scheme every possible success.

Mr. Carteighe said he should like to say that he felt very grateful to Mr. Tocher. He had shown a tenacity, knowledge, and ability that was rare among pharmacists.

Mr. Storrar at this point read a portion of a letter he had received that morning from Mr. Tocher, in which he pointed out the desirability of refuting any suggestion that the Universities would not agree to the condition that the scheme should be confined to pharmacists. He had reason to believe that they would all agree to that condition.

Mr. Atkins said it gave him great pleasure to support the recommendations of the Committee. He did not think there would be any danger of a collision between the Major and a B.Sc. degree in pharmacy. He thought the Council would be advancing the cause of education in supporting the scheme. What had been said in regard to the value placed upon education in Scotland was emphatically true, and he could relate instances of poor persons who, beginning with a humble bursary, had advanced step by step, until they now occupied important positions in the Civil Service. He hoped that the example set by Mr. Carnegie and by Mr. Rhodes would be followed by other wealthy men.

The Vice-President wished to place on record the fact that he was very heartily in sympathy with the aspirations of Scottish pharmacists, and he hoped that their desires would be realised. He had read Mr. Tocher's pamphlet, and he shared in the high appreciation of his ability.

Mr. Wootton said that he had on several occasions asked questions respecting this scheme, and he would like to take that opportunity of explaining that his purpose had been to bring the matter forward, because he had the opinion that there was some jealousy or scheme on foot to thwart the Scotch scheme. Therefore, he was very pleased to hear the almost unanimous agreement of the Council with the scheme. He agreed with Mr. Storrar that the North British Branch Executive would have neglected its duty if it had not taken advantage of the Carnegie Trust. The only remark he had to make on the report before the Council was that he thought it was hardly necessary to emphasise the fact that a B.Sc. degree could not take the place of the qualification provided for under the Pharmacy Act.

Mr. Carteighe said the Committee thought it seemed to be necessary to emphasise that point for the benefit of pharmacists who had not read the scheme, as otherwise they might not understand it.

Mr. Gifford said he must thank the Library Committee for the very full report before the Council. He was very pleased to see the reception the scheme had received; he felt certain that it would go far to cement Scotch feeling towards the Society.

The President said he failed to see what disadvantage there would be in anyone trying to get a degree in pharmacy, because it must tend to the elevation of pharmacy.

After further discussion the report and recommendations of the Library Committee were adopted.

The Poisons Committee.

Mr. Young asked whether the attention of the President had been directed to the recent publication in various newspapers of articles referring to the proceedings of the Privy Council's Poisons Committee, and, if so, could he say whether those articles were authentic, or published with the cognisance of the Poisons Committee.

The President said he had seen the articles referred to, but he was not in a position to say whether they were authentic.

Mr. Hills said he had always understood that the evidence given before the Committee was private; therefore, whatever was published by newspapers was a matter of speculation; consequently, any deduction that might be drawn from speculation would have comparatively little weight.

Appointment of a Divisional Secretary.

The President said a communication had been received from Mr. F. Andrews, Divisional Secretary for South Paddington, asking to be relieved of the duties of the office, and suggesting that Mr. Herbert Cracknell be appointed in his place. Mr. Andrews had acted as the local officer of the Society for a great many years, and had served the Society in other capacities, including that of Auditor, and as a member of the Council. He was sure the Council would desire to convey to Mr. Andrews its very cordial thanks for his services, which had been of immense value to the Society.

The thanks of the Council were accorded to Mr. Andrews, and Mr. Cracknell was appointed in his place.

Appointment of a Demonstrator.

The President stated that, Mr. Horrell having resigned, Professor Green had recommended that Mr. Eric Drabble be appointed demonstrator in botany in the School of Pharmacy.

The recommendation was agreed to.

Division of the Minor Examination.

Dr. Symes, pursuant to notice of motion, moved:—

> That this Council approves of dividing the Minor or qualifying examination, and requests the Library, Museum, and House Committee to consider and report on the best means of carrying the same into effect under the existing Acts of Parliament.

He pointed out that this question had been discussed before by the Council, and it had so far recognised the desirability of the division of the Minor examination as to make provision for it in a draft Pharmacy Bill. It was there associated with a compulsory curriculum, and he should be very sorry if, in passing this resolution, it would interfere with the securing of a curriculum, but in putting the notice of motion on the paper, he had in mind the procedure of Mr. Walter Hills in the matter of procuring the admittance of chemists and druggists to membership of the Society, viz., that he divested the question of any controversial matter. That was his (Dr. Symes') object, and he, therefore, might be excused for not adopting a curriculum. They had been told that the division of the Minor Examination must be accompanied by a compulsory curriculum, and that the power to enforce a curriculum did not come within the Pharmacy Act. He maintained, however, that the division of the Minor Examination could be effected under the present Act, and that without any great difficulty. The Act said very little about the conduct of the examinations, except that Boards of Examiners shall be appointed to conduct the examinations. Therefore, it seemed to him that the question of dividing the examination was purely a matter to be dealt with in the Bye-Laws. There could be no question of the Council's power to do what was embodied in his motion. The question was an extremely important one, and he was decidedly of opinion that if the Minor Examination was divided it would be better, not only for the students, but also for the safety of the public.

Mr. Young said he had no hesitation in seconding the motion. It had been suggested to him that the matter was one that should be introduced from outside the Council. It was true, he presumed, that no petition had been presented on this subject, but he felt that apart from the all-absorbing question of company pharmacy there was no question of pharmaceutical reform that was more popular amongst pharmacists throughout the country than that of the division of the Minor Examination. He had no sympathy with the suggestion that the matter should be left until a compulsory curriculum was obtained. It was not a new idea, because as far back as 1871, and possibly more recently, a system of division existed, candidates who passed in certain subjects and failed in others being permitted to come up again for examination only in the subjects they previously failed in. He was not suggesting that such a system of division should be adopted now, but it had been admitted that examination was not a perfect method of gauging a candidate's knowledge, and he thought it was necessary that something should be done to prevent the existing anomaly of candidates who came up in, say, January, passing in dispensing and failing in other subjects, coming up three months later to fail in dispensing and pass in the other subjects. That had happened more than once to his own knowledge, and it simply showed that the system of examination was wrong.

Mr. Hills said that from time to time members of Council had been subjected to a little badgering just prior to the Council election on this question, and his reply had always been that he was in favour of a division of the Minor under certain conditions, those conditions being that it must be in conjunction with a compulsory curriculum. Therefore he wished to move as an amendment to Dr. Symes' motion the following:—

To leave out from Dr. Symes' motion all the words after "Council," and insert in place thereof "is not prepared to consider the question of the division of the qualifying examination apart from the institution of a compulsory curriculum."

In view of the letter received from the Privy Council, and in view of the fact that at the present time a Departmental Committee is considering the question of the Schedule to the Pharmacy Act, and that a report would in due course be presented, he hoped that Dr. Symes would not press his motion.

Mr. Park seconded the amendment. His experience was that candidates who had been properly trained during apprenticeship found no difficulty in passing the examination. He thought an important point was that parents when apprenticing their children should ascertain whether they would have proper facilities for continuing their studies during apprenticeship.

A long discussion followed, in the course of which Mr. Carteighe pointed out that when this question was brought to the notice of the Privy Council some time ago, the Council of the Society was informed that the legal advisers of the Privy Council, who were usually the law officers of the Crown, were of opinion that the Society had no power in the matter. Personally, he sympathised with Dr. Symes, but he hoped he would not press his motion.

Mr. Cooper supported the amendment, although he was in sympathy with the object Dr. Symes had in view.

Mr. Glyn-Jones supported the motion. He did not agree with the view that division of the Minor and a compulsory curriculum must necessarily go together. He felt that it would be well for the motion to be passed, and that the Committee should then go carefully into the matter with a view to seeing whether, in some way or other, the Minor Examination could not be divided, and report to a future meeting of the Council as to whether it can be done or not.

Mr. Carteighe: You mean whether a way cannot be found of getting round the difficulty?

Mr. Glyn-Jones: Exactly; we should only be following the lead of other examining bodies, and I see no reason why, as Mr. Carteighe says, we should not find a way of "getting round" this matter.

Mr. Atkins sympathised with the motion, but stated that he should support the amendment, because he thought the present was a very inopportune time to bring the matter forward.

Mr. Gifford agreed with Mr. Atkins. Mr. Young had said that this was a very popular question. Whether a question was popular or not would not affect his opinion.

Mr. Young: I don't think anything would.

Mr. Gifford, continuing, said he deduced from the facts that the Council had always insisted upon its prerogatives—*i.e.*, individual qualification—and he took it that that was the foundation of all regulations for the examination of pharmacists. However much he agreed with the division of the Minor, he should not like to agree with it except as a foundation.

Mr. Harrington supported the motion. Division of the examination was necessary, but a curriculum could wait.

Mr. Robinson also supported the motion. He pointed out that the letter from the Privy Council only referred to a curriculum in two or three subjects. Personally, he was most anxious to have a curriculum, because it would be better for the students, but at the same time he thought that at present there is no examination that has a greater element of chance than the Minor. In the medical examinations candidates were allowed to take their examination by stages, and he saw no reason why the Minor Examination should not be conducted on similar lines.

Mr. Wootton suggested that it would be well to have the opinions of the Boards of Examiners before deciding anything definitely.

The President said the Board of Examiners for England and Wales had already considered the question and had reported their views to the Council, the Examiners stating that they were not prepared to discuss the division of the Minor apart from the establishment of a definite curriculum.

Mr. Young asked why the practice to which he had alluded of allowing candidates to pass the examination in two stages had been dropped.

Mr. Carteighe said at that time it was the practice to make an allowance to candidates who passed in certain subjects with 25 per cent. of marks in each subject, provided at the subsequent examination they obtained 50 per cent. of marks in any one subject, but it was found that they rarely ever got 50 per cent. of marks in one subject, hence the practice was dropped.

The President and Vice-President expressed their sympathy with Dr. Symes, but they felt that the present was an inopportune time to bring the matter forward.

Dr. Symes having spoken on the amendment, it was put to the meeting and carried by nine votes to eight.

The amended motion, which was then put and carried, read as follows:—

That this Council is not prepared to consider the question of the division of the qualifying examination apart from the institution of a compulsory curriculum.

The New Bye-Laws.

The President moved that the report and recommendations of the Bye-Law Committee be approved and adopted. He pointed out that the proposed new Bye-Laws had been under consideration since 1900, the delay being due to the fact that the Council was endeavouring to get an amendment to the Pharmacy Act, which, if secured, would necessitate further new Bye-Laws. The Bye-Laws now stood exactly as they were in August, 1900, with the one exception that the Privy Council had asked them to reconsider.

The report was adopted.

Mr. Carteighe then moved, and it was carried, that the new Bye-Laws be read a first time, and be referred to the next ordinary meeting of the Council for confirmation. It was also agreed that the text of the new Bye-Laws be published in the *Pharmaceutical Journal* (see special supplement to this week's *P.J.*).

Correspondence.

The Secretary read a communication from a member stating that his certificate of membership had been destroyed by fire, and he asked to be furnished with another certificate.

It was decided to supply the new certificate.

The Secretary stated that a letter had been received from the Royal Institute of Public Health requesting that a delegate be appointed to represent the Society at the forthcoming Congress to be held at Exeter.

It was decided to appoint Mr. Thomas Tickle to represent the Society at the Congress.

A communication from the Torquay Chemists' Association concerning the Inland Revenue prosecutions (see *ante*, p. 287) was referred to the Law and Parliamentary Committee.

An application from the Public and Poor Law Dispensers' Association for a copy of the Register was referred to the Library Committee.

A letter from the Colonial Office in regard to the admission to the Transvaal and the Orange River Colony of medical practitioners, surgeons, dentists, and chemists and druggists was referred to the Law and Parliamentary Committee.

General Purposes Committee.

The President said the report of the General Purposes Committee included a report from the Professors on the

School of Pharmacy Prize Competition,

the following recommendations for awards being made:—

BOTANY.	
Silver Medal	Reginald R. Bennett.
Certificate of Honour	Wm. T. Young. C. Trim Johnson.
THEORETICAL CHEMISTRY.	
Silver Medal	Wm. T. Young.
Certificate of Honour	Ernest T. Neathercoat. J. Stuart Hills.
PRACTICAL CHEMISTRY.	
Silver Medal	Horace S. Phillips.
Certificate of Honour	Ernest T. Neathercoat. Equal Reginald R. Bennett. Equal Wm. T. Young.
MATERIA MEDICA.	
Silver Medal	Reginald R. Bennett.
Certificate of Honour	J. Stuart Hills. Wm. T. Young.

The report of the Professors was approved.

Poisons Regulations.

The Committee recommended that Clause 3 of the existing Poisons Regulations (see *P.J.* [4], **8**, 128), be amended to read as follows:—

3. That in the dispensing and selling of poisons, all liniments, embrocations, lotions, and *liquid disinfectants* containing poison be sent out in bottles rendered distinguishable by touch from ordinary medicine bottles, and that there also be affixed to each such bottle (in addition to the name of the article, and to any particular instructions for its use) a label giving notice that the contents of the bottle are not to be taken internally.

The recommendation of the Committee was adopted, and it was decided that the amended Poisons Regulations be submitted to the Annual General Meeting of the Society for approval.

This concluded the public business.

LETTERS TO THE EDITOR.

Cannabis Indica.

In last week's *Pharmaceutical Journal* Mr. Maben, in connection with my recent note on commercial cannabis indica extract, summarises the work done by Hooper and others, and remarks that it would be interesting to know whether the dry resins I obtained were physiologically active or not. The records published concerning what is really the active constituents are, as Mr. Maben shows, inconclusive; for that very reason, though having the results achieved by these workers by me, I stated that it was not my purpose to touch at all upon the chemical composition of the drug, or inferentially upon what constituent or constituents the medical value depends. The points I endeavoured to bring out, as proved by my experiments, were that—

(1) The B.P. extract of commerce is physically a very variable article. It contains to a greater or less extent an extract which, insoluble in 90 per cent. alcohol, is soluble in water, and has all the characters of an aqueous extract of cannabis indica, made after the drug has been exhausted with rectified spirit.

(2) It varies from a syrupy consistence to that of a stiff paste, due to the relatively large variation in the percentage of water present.

(3) An improvement upon the official process would be to exhaust the drug with absolute alcohol and prepare the tincture by dissolving the extract in Spiritus Ætheris.

I agree entirely with Mr. Maben that a normal percentage of resin may not guarantee adequate therapeutic activity. I neither stated nor implied that it does. Whether the therapeutic activity lies in the resin, in a volatile oil, or in the evanescent body accompanying the resin, is foreign to the question; until the Pharmacopœia gives some specific assay-process for the crude drug, I take it that uniformity in the physical characters of the extract would be a step in advance of the varying article at present on the market. My experiments were recorded with the object of furthering that result.

Newcastle-on-Tyne, April 7, 1902. Geo. F. Merson.

The "William Martindale Memorial."

At a meeting of the former colleagues and friends of the late Mr. William Martindale, held at the Pharmaceutical Society on Tuesday, March 4 last, the following resolution was passed:—

With the view of perpetuating the memory of the late Mr. William Martindale, a past-President of this Society, it is desirable that steps be taken to procure a bust of our late deceased friend, to be placed in the house of this Society, and in the event of the response being satisfactory, a medal or some other encouragement for the advancement of Pharmacy be also provided, the exact nature of which shall be determined at a subsequent meeting of subscribers.

A committee was appointed, with power to add to their number, to take the necessary steps for carrying out the foregoing resolution.

COMMITTEE.

Mr. G. T. W. Newsholme, President of the Pharmaceutical Society.
Mr. C. B. Allen, Vice-President of the Pharmaceutical Society.

Atkins, S. R., Salisbury.
Boa, Peter, Edinburgh.
Bremridge, R., London.
Carteighe, M., London (Treasurer).
Cooper, A., London.
Gulliver, W. F., London
Howie, W. L., London.
Naylor, W. A. H., London.
Philp, W. J. I., London.
Storrar, D., Kirkcaldy.
Taylor, G. S., London (Secretary).
Umney, J. C., London.

The late Mr. William Martindale was known, either personally or by his publications, to all who take an interest in the advancement of pharmacy and the progress of the medical art all over the world. He was a past-President and Treasurer of the Pharmaceutical Society of Great Britain, a past-President of the British Pharmaceutical Conference, and for many years Chairman of the Formulary Committee of the Conference. He was also an Honorary Member of the American Pharmaceutical Association, and of many other similar associations. Subscriptions of any amount not exceeding two guineas are invited by the Committee, and should be addressed to the Hon. Secretary, Mr. G. S. Taylor, at 17, Bloomsbury Square, London, W.C. Postal orders and cheques should be made payable to the Treasurer, Michael Carteighe, 180, New Bond Street, W., and crossed London and Westminster Bank, Westminster branch.

G. S. Taylor, Hon. Secretary.

17, Bloomsbury Square, London, W.C.,
April 7, 1902.

PRELIMINARY LIST OF SUBSCRIPTIONS

	£	s.	d.
Allen, C. B.	2	2	0
Atkins, S. R.	2	2	0
Atkinson, Leo	1	1	0
Attfield, Dr. John, F.R.S.	2	2	0
Barrett, J. T.	1	1	0
Bate, H.	1	1	0
Bateson, Thomas	1	1	0
Benger, F. Baden	2	2	0
Bottle, Alexander	1	1	0
Bourdas, I.	2	2	0
Bourdas, I., jun.	2	2	0
Bowen, J. W.	2	2	0
Bremridge, R.	2	2	0
British and Colonial Druggist, Proprietors of	2	2	0
Brodie, R.	0	5	0
Buck, Anthony S.	1	1	0
Butt, E. N.	2	2	0
Carteighe, M.	2	2	0
Clark, W. Inglis	1	1	0
Cooper, A. J. B.	1	1	0
Cooper, Albert	1	1	0
Cooper, H. C.	1	1	0
Cracknell, H.	1	1	0
Curtis and Co.	2	2	0
Dakin, J. Harrison	1	0	0
Deane, Harold	0	5	0
Duncan, Flockhart, and Co.	2	2	0
Ellerington, John P.	2	2	0
Ewing, James L.	1	1	0
Farr, E. H.	1	1	0
Flux, Thompson, and Co.	2	2	0
Foggan, G.	0	10	6
Francis, W. H.	2	2	0
Glyn-Jones, W. S.	1	1	0
Gostling, T. P.	1	1	0
Graham, H.	0	5	0
Greenish, Professor H. G.	1	1	0
Grose, N. M.	2	2	0
Gulliver, W. F.	2	2	0
Hampson, Robert	1	1	0
Hartley, Stephen	0	5	0
Hills, Walter	2	2	0
Holmes, E. M.	1	1	0
Howie, W. L.	2	2	0
Humphrey, John	1	1	0
Johnston, J.	1	1	0
Lewis, D. L.	1	1	0
Lowther, H. R.	0	5	0
Luff, Dr. A. P.	2	2	0
Maben, Thos.	1	1	0
Macadam, R.	1	1	0
Mager, W. J.	1	1	0
Mandelson, Samuel C.	2	2	0
Marsh, E. R.	1	1	0
Martin, N. H.	2	2	0
Mather, J. H.	1	1	0
Maw, Son, and Sons	2	2	0
McEwan, Peter	1	1	0
Meadows, H.	1	1	0
Merck, E.	2	2	0
Miles, Chas. J.	2	2	0
Minchin, W.	0	10	6
Morgan Bros. (Proprietors of the *Chemist and Druggist*)	2	2	0
Morison, P., and Son	2	2	0
Myers, William	0	10	6
Naylor, W. A. H.	2	2	0
Newsholme, G. T. W.	2	2	0
Park, C. J.	1	1	0
Parke, Davis, and Co.	2	2	0
Philp, W. J. I.	2	2	0
Ransom, F.	1	1	0
Ringer, Dr. Sydney, F.R.S.	1	1	0
Robbins, John	2	2	0
Rogers, Frank A.	1	1	0
Shaw, J. W.	1	1	0
Storrar, D.	1	1	0
Symes, C.	1	1	0
Taubman, Robert	2	2	0
Taylor, G. S.	1	1	0
Umney, Chas.	2	2	0
Umney, E. A.	1	1	0
Umney, J. C.	2	2	0
Warren, W.	2	2	0
Watson, T. Donald	1	1	0
Wellcome, H. S.	2	2	0
Westcott, Dr. W. Wynn	2	2	0
Weston, S. J.	1	1	0
Wilson, Harold	1	1	0
Wootton, A. C.	1	1	0
Wright, H. C.	2	2	0
Wright, R.	1	1	0
Young, J. Rymer	1	1	0

The Oxidation of Morphine in the Tissues.

In a paper which I read before the Edinburgh Chemists', Assistants', and Apprentices' Association I said morphine, when injected under the skin, might have on the tissues a continuous action, and I compared it to the action of pepsin on proteids outside the body. Mr. D. B. Dott takes exception to the comparison, and I can appreciate the force of his reasoning, but I did not intend to convey the idea that the parallelism could be pushed to its entirety. The illustration was the only one which occurred to me as suitable to the occasion. Mr. Dott says he thought morphine would be oxidised in the tissues, but only a very small proportion of it is oxidised; the greater proportion of it is excreted by the urine and the stomach unchanged. Of the changes which drugs undergo in the tissues and the channels by which they are excreted we are largely ignorant. The question is important, but the difficulties are great. Only to mention one: I have examined the urine and vomit of patients taking digitalis. Here one has to get rid of the pigments of the urine and the proteids of the vomit without decomposing the glucosides of the digitalis. In such experiments a useful combination would be a well-trained pharmaceutical chemist and a pharmacologist.

Leeds, April 8, 1902. Gordon Sharp, M.D.

The Medicine Stamp Acts.

The case against us, heard at Marlborough Street Police Court on Wednesday, March 26 (see p. 306), arose out of our refusing to pay the mitigated penalty asked for by the Inland Revenue after a long correspondence with regard to our not stamping an article we have prepared for years—viz., Porto Coca Gargle, a label of which we enclose for your inspection. The magistrate decided in our favour that it was not liable to stamp duty, against the contention of the learned counsel who appeared for them, whose argument was that the word "tonic" implied that the preparation was for the cure or relief of a malady. Our argument was (Mr. J. M. Davis appearing) that for years the Inland Revenue has attempted to extend the scope of the Act beyond the intentions of the framers, who intended it only for such preparations which the makers claimed exclusive right of making, and who, by either label or advertisement, professed to possess the secret of its preparation. If the contention of the Inland Revenue was correct—viz., that the word "tonic" implied a cure—other words, such as aperient, laxative, diuretic, etc., would naturally, if used on a label, render the article liable to stamp duty, in which case it would be impossible for a chemist to label any compound preparation sufficiently to indicate its use unless stamped. The learned counsel also attempted the task of persuading the magistrate that the wording of the directions implied that it was intended for the relief or cure of sore throats. We would advise chemists, when they have good reasons to consider a label not liable to stamp duty, not to pay the mitigated penalty imposed on them conditionally to non-prosecution, but to contest the case, as we have in this and other cases successfully, and thus defeat the attempt of the Inland Revenue to extend unduly the powers of the Stamp Act beyond the intention of Parliament. We may remark that this is by no means the first time we have succeeded in convincing a magistrate that the Inland Revenue officers were not infallible. In yet other cases, after a long correspondence, the Inland Revenue officials have thought it wise to withdraw their threats, and retreated under the cover of a polite letter, suggesting that we should make some slight alteration in our label.

London, April 8, 1902. J. Morgan Davis and Sons.

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LONDON: SATURDAY, APRIL 12, 1902.

A DEFENCE OF TRIED MEDICINES.

In a farewell retrospect, communicated to the *British Medical Journal* by Dr. J. K. Spender, it is pointed out that, if the medicine, surgery, and therapeutics of 1852 could nowadays be reproduced on a screen, some of it would look crude and thin, while there might be some which would now be repudiated as not only imperfect, but absolutely wrong. The same may be prophesied, however, with regard to the medical practice of to-day if, fifty years hence, it should be compared in a similar manner with the practice of that time, though certain principles will then be the same as at present. In looking back fifty years, therefore, Dr. Spender finds that, though there have been many new discoveries and new developments of old knowledge, not all the "familiar friends" have passed away. Of the "bed-rock truths" which last forever, he quotes one as especially rich in useful results—viz., the administration of medicines in comparatively small and frequent doses. It is said to be a settled ordinance that nearly all great medicines are also great poisons, the dynamic forces which make a substance medicinal making it also toxic. It is a question only of form and degree, good and evil being always near neighbours, and excess of good becoming malign. As Shakespeare has it—

> Within the infant rind of this small flower,
> Poison has residence and medicine power.

Pope has also expressed the same idea clearly in the words:—

> As poison heals, in just proportion us'd.

Recognising the truth thus conveyed, Dr. Spender says our complex pharmacological problem is how to get the greatest amount of good from a medicine with the least amount of harm. The capacity of a medicine for good, he insists, is a measure of its capacity for harm, the harm being wrapped in the good in such a manner that the two cannot be separated entirely.

This brings the author to the question of dosage. Etymologically speaking, he points out, a "dose" is a thing given; in formal terms it denotes a quantity which is calculated to do a specific duty. The British Pharmacopœia specifies the doses of official medicines, but gives no instruction about the number of doses which ought to be given, or what interval there should be between any two doses, the perplexity being increased by the fact that a drug may show opposite qualities in comparatively small and large doses respectively. "Here the human agent comes in; here he compasses his purpose by a skilful repetition of doses, by the nice adjustment of means to an end, and by directing every other aid (moral and mental) which may help the object that he has in view." As is well known, many people insist that they cannot take a particular medicine because it disagrees with them in a real or fancied way. Dr. Spender points out that the supposed disagreement may be caused partly by the medicine being taken in a bulk which disturbs a natural function. In such a case, he advises that the particular bulk be divided into four, the smaller parts being then taken four times as often as the original undivided dose. The same therapeutic influence is thus got, with the minimum of disturbed function, and that influence may even be favoured, rather than impeded or thwarted. Thus, "if a quantity termed X, given to a patient every fourth hour, causes symptoms of more or less toxic gravity; then split X into x, x, x, x, and each of these petty factors may be administered every hour with no more evident effect than if they were so many rations of cold water." This canon of therapeutic art is, as Dr. Spender indicates, of far-reaching importance, since it abolishes the old belief that a drug must demonstrate itself to be a poison before it can be accepted as a medicine. When the drug is disarmed of every physiological terror, its therapeutic victory is found to be the more complete, the evil spirit being dislodged, and the good spirit having a larger field of action, while poison has no longer residence and medicine has wider power.

In the subsequent portion of his retrospect, Dr. Spender treats at some length of the effects producible by certain medicaments under suitable conditions, some remarkable cases being cited to illustrate the advantages of administering morphine, tartarated antimony, etc., with a due regard to the circumstances of each particular case. But the application of remedies in the most suitable manner requires special knowledge, such as too many medical practitioners unfortunately lack nowadays, and though every valuable medicine represents power, it depends upon the skill of him who works with it whether that power shall be for good or evil. According to Dr. Spender, "a medical workman can no more tell his secret than an accomplished musician can tell another how he touches an instrument, or how the melody is begotten." Nevertheless, there are principles which can be taught and rules which must be obeyed. "The physician sees a dangerous substance, but it does not frighten him; he breaks it into fragments, and endows each morsel with a new and benign efficacy. Thus a base thing may become an engine of mercy and comfort." In conclusion, it is urged that the physician's aim should be not so much to acquire new remedies as to gain a more exact knowledge of those he has, and to win a more complete mastery in the use of them. The official materia medica is a storehouse of good things, but that does not profit a medical practitioner who lacks the skill to employ those things to the best advantage. Moreover, there is no royal road to that knowledge, the only road being severe clinical study, while personal experience constitutes the only school.

ANNOTATIONS.

THE PROPOSED BYE-LAWS, which were read for the first time at the meeting of the Council of the Pharmaceutical Society on Wednesday, are not materially different from those which were submitted to the Privy Council for approval some time ago, except that the proposal to alter the fee for re-examination is not now included in proposed Bye-Law 23 of Section 10. Most of the alterations in Section I., which deals with qualifications, elections, and subscriptions, have the object of securing greater clearness, the one important change in that Section being the substitution of April 1 for May 1 as the date before which all annual subscriptions to the Society must in future be paid. Several minor alterations also occur in Section V., which refers to the election of the Council and Auditors, while Bye-Law 4 of Section VI. is modified so that other members of the Council than the President or Vice-President may preside at meetings of committees. Finally, there are various omissions in Section X., the omitted words being such as refer to the superseded arrangements for the "First" and "Minor" examinations. The whole of the proposed changes have already been approved by the members of the Pharmaceutical Society, but it is necessary, as a matter of form, that the proposed Bye-Laws should be confirmed and approved by a Special General Meeting of the members, after being read three times at meetings of the Council, and before being submitted for the approval of the Privy Council.

THE WILLIAM MARTINDALE MEMORIAL FUND already exceeds the sum of one hundred and thirty pounds, and a circular is now being issued by the Hon. Secretary inviting subscriptions from pharmacists and others who have not yet signified their intention of supporting the Fund. The text of the circular and a preliminary list of subscriptions will be found at page 302. It is hoped that a sum of not less than five hundred pounds will ultimately be available, and it may be desirable to state here that small subscriptions will be no less welcome than larger ones, the great object being to make the subscription list a thoroughly representative one.

THE ANNUAL DINNER of the Pharmaceutical Society of Great Britain is to be held on Tuesday, May 27, and the tickets are now ready. The Hon. Secretary will, therefore, be glad to hear as early as possible how many are required, and the names of the gentlemen for whom they are intended. It should also be noted that it will assist the Committee and ensure friends being seated together if the necessary information be supplied promptly. Applications for tickets, accompanied by a remittance, must be in the Hon. Secretary's hands not later than Saturday, May 24, in order to enable him to make the necessary detailed arrangements. The price of each ticket is one guinea, and all applications must be addressed to 17, Bloomsbury Square, London, W.C.

THE CHEMISTS' DEFENCE ASSOCIATION has again been successful in defending a case under the Medicine Stamp Acts (see p. 306), and the Inland Revenue authorities have also failed to secure a conviction in another case reported in this issue (see pp. 306 and 302). In the first instance liability was said to be incurred by an alleged recommendation on a card exposed in a shop window, upon which a certain lozenge was referred to as "a most effective bronchial, throat, and voice lozenge." For the defence it was contended that the lozenges were not recommended as a medicine by the words upon the card. In the result the magistrates decided that the lozenges were not liable to stamp duty, and the summons was dismissed. During the hearing of the case reference was made to the recent proceedings against Mr. Sanguinetti, and further particulars regarding the proposed appeal in the Brentford case will be found at page 306. It will be noted that the sympathies of the magistrates were evidently entirely with Mr. Sanguinetti, as expressed in the Chairman's remarks. In the case against Messrs. Davis and Sons, the preparation was described on the label as "Porto Coca Gargle—a voice-producer and throat tonic of exceptional excellence, prepared from the prescription of an eminent throat specialist of Cauterets." Mr. Denman, however, found that those words do not render the gargle liable.

A CURIOUS ACTION was tried at the Plymouth County Court last month, when one medical practitioner sued another for arrears of salary alleged to be due. The plaintiff had taken charge of defendant's surgery temporarily, and received letters from his principal, urging him to endeavour to increase the cash returns of the business. Thus, he was told that, as at least four pounds per week must be taken in order to pay expenses, he ought to charge the patients more than he had been doing, and give them extra bottles of medicine, plasters, ointments, and lotions whenever he got the chance. In one letter the defendant said: "I saw you had given a six-ounce bottle to a child five years old, and the dose marked on it was one teaspoonful three times a day. Now, you will see, we shall never make a fortune at that rate. . . . Kindly remedy this. Give to a child of that age a one and a half ounce bottle, charge 1s., and order a teaspoonful every two or three hours, so that they may come back next day." Commenting on this case, the *Lancet* expresses the opinion that the defendant's situation was made to wear as undignified an appearance as possible, thanks to his own letters, and repudiates utterly any suggestion that such unworthy tactics are often resorted to by members of the "great and philanthropic profession" of medicine.

THE LATE CECIL RHODES has suggested in his will that the arrangements for medical education at Oxford University should be improved, and the *Times* publishes the view of Professor J. Burdon Sanderson on the subject. He points out that preliminary medical education—in inorganic and organic chemistry, natural philosophy, and biology—is already amply provided for in the University, though the laboratories may require extension at a future period. With regard to the subjects—anatomy, physiology, pathology, pharmacology, and hygiene—which constitute the science of medicine as distinguished from its practice, the existing arrangements are less complete. The department of human anatomy is complete, and the physiological department is well equipped, but more space is required for the development of certain branches of the subject. The pathological laboratory is inadequately equipped, and the University has not as yet been able to provide sufficient remuneration for the teaching staff, but the only branches of medical science for the teaching of which special departments have not yet been established are pharmacology and hygiene. As regards the third part of the medical curriculum—*i.e.*, instruction in the practice of medicine—the University has adopted the principle that the two or three years which its students are required to devote to their purely professional studies must be spent where the existence of large hospitals affords opportunities for seeing medical and surgical practice in all its branches. The scientific teaching at Oxford, as at Cambridge, has been organised with the view that a thorough training in theory is essential, and the great London hospitals have recognised the value of that view by offering to Oxford and Cambridge students only special scholarships, on condition that they have completed the theoretical part of their medical study at the Universities, and are prepared to begin straightway their studies in the hospital wards, there being thus a complete solidarity between the instruction given at Oxford in the theory with the practical training they receive in

London. It is thought that, if Mr. Rhodes's scheme succeeds, the majority of the scholars will go to Oxford, not merely for the purpose of acquiring Oxford culture, but for that of fitting themselves in the best possible way for the business of life. Oxford has been for the last dozen years providing what it considers the best possible education in medicine, the practical difficulty which has prevented many from taking advantage of it being the long duration of the total period of study. The Oxford student of medicine must spend some six or seven years, reckoned from the date of matriculation to the completion of his hospital work, and that time cannot be shortened with advantage, but for those who are provided with the income which Mr. Rhodes's munificent bequest affords this difficulty will scarcely exist. The scholarship will abundantly provide for the years spent in Oxford, and enable its holders to compete with advantage for the hospital scholarships already mentioned.

The 'Pharmacopœa Croatico-Slavonica' has reached a second edition, and now forms a handsome volume of more than a thousand pages. The work is printed both in Latin and the vernacular, the two versions facing each other on opposite pages throughout the book. Most of the substances mentioned in this pharmacopœia are also official in the British Pharmacopœia, though a few articles included in the foreign work are unfamiliar to British pharmacists. In the chemical monographs the equivalent numbers are given below the formulæ, the names of natural orders follow the names of plants, and antidotes are specified at the end of all monographs on poisonous substances. The price of the work, which can be obtained through Messrs. Dulau and Co., Soho Square, London, is sixteen shillings net or, half bound, nineteen shillings net.

The Poisoning Fatalities reported since last week number fifteen, but only five were accidental cases:—

Poison.	Accident.	Suicide.
Ammonia	—	1
Carbolic Acid	1	4
Chloroform	1	—
Copper Sulphate	1	—
Elliman's Embrocation	—	1
Laudanum	—	1
Morphine	1	—
Nitric Acid	1	—
Nicotine (XL-All Fumigator)	—	1
Phosphorus (Matches)	—	1
Spirit of Salt	—	1

The ammonia was taken by a woman (Hull) who had just been discharged from a private asylum. Carbolic acid was drunk inadvertently by an army pensioner at Westminster, while intoxicated; also purposely by a collier at Newton Heath, a painter at Shaw, a woman at Manchester, and a man at Islington. An overdose of chloroform was inhaled by a Harlesden provision dealer; a workman at St. Helens fell into a vat containing a solution of copper sulphate, an elderly lady at Wandsworth drank the contents of a bottle of Elliman's embrocation, a Liverpool sailor committed suicide by taking laudanum, and a medical man at Coxhoe accidentally took an overdose of morphine. The nitric acid was taken in mistake for whisky by a Leeds machinist, the XL-All fumigator was drunk by a market gardener at Penketh, a woman at Newcastle-on-Tyne drank some liquid in which she had steeped the contents of six boxes of matches, and spirit of salt was purposely taken by a Coventry cycle fitter, who had previously complained of severe pain. In conclusion, it should be added that the death of a boy at Putney, reported last week as being caused by the root of *Solanum nigrum*, was really caused by the root of *Œnanthe crocata*, which has sometimes been mistaken for celery.

NOTES IN PARLIAMENT.

Poisoned by Lead in Pills.—The House of Commons has resumed business after the Easter recess. On Tuesday last the Home Secretary was asked by Mr. Coghill whether his attention had been been called to an inquest held by the coroner for North-West Staffordshire, on the 18th inst., on a married woman residing at Porthill, when the coroner, in summing up, stated that it appeared that the deceased was a milliner, and had never been employed in the potteries, and consequently could not have got this lead poisoning in the course of her trade; that it could not be difficult to find out where this lead was obtained; and that if this had been done, and the person who supplied it knew for what purpose, he would find himself charged with manslaughter at least. He also asked whether, in view of the fact that the jury returned a verdict to the effect that death was due to lead poisoning, brought about by deceased taking pills for a certain purpose, the right hon. gentleman would cause inquiries to be instituted as to the person who supplied the deceased with the lead pills. Mr. Ritchie replied that active inquiries had been made. No clue, however, had been obtained to enable the person who supplied the pills to be traced.

Cost of the Small-pox Epidemic.—Mr. Long, replying to Mr. Bartley in the House of Commons on Tuesday last, said that the small-pox epidemic in London had involved an expenditure of about £280,000 on the part of the managers of the Metropolitan Asylums District during the half-year to the end of March last. This amount included a sum of £225,000 in respect of special expenditure in connection with small-pox accommodation and transport. Mr. Long has no information as to the amounts expended by Boards of Guardians and other local authorities in London in connection with the epidemic.

Vaccination After Infection.—An infant born on the hospital ship "Atlas" on March 1 was vaccinated on that day and died of small-pox on the 12th. Many similar cases occur in the returns of the Registrar-General, and Mr. Long has, therefore, been asked by Mr. Corrie Grant whether he will consider whether the vaccination of such children after infection should be abandoned. Mr. Long, however, cannot undertake to recommend this course.

Government Lymph.—Answering Mr. Bartley on Tuesday last, Mr. Long stated that since the early part of last month he had been able to meet all the demands made by public vaccinators for lymph, not only for primary vaccinations, but also for revaccinations. He does not see his way, however, to make arrangements to supply private practitioners as well as the public vaccinators with Government lymph for primary and secondary vaccination at about cost price.

Surgical Instruments in India.—Mr. Weir, having recently travelled in India, asserts that in the military hospitals there surgical instruments of an old pattern, with wooden handles, are still used. Questioned on the subject by the hon. member, Lord Geo. Hamilton replied that he was informed that all instruments sent to India in recent years had metal handles, but he promised to inquire more fully into the matter. If it is found that a large proportion of the surgical instruments now in use in India are not of the most approved pattern, the Government of India will, says Lord George, no doubt be anxious to change them with as little delay as possible.

LEGAL INTELLIGENCE.

Medicine Stamp Acts.

Alleged Recommendation on Label.

At the Town Hall, Brentford, on Thursday, March 27, Mr. Dennis referred to the recent proceedings against Mr. F. Sanguinetti (see *ante*, p. 260) and asked, on behalf of the Inland Revenue authorities, if the Bench would state a case for the High Court.

The Chairman (Mr. Sutton Sharpe) said he thought it might be a waste of money and time, but Mr. Dennis said it was a matter of great importance.

The Chairman also said the Bench had been of opinion that the mere putting of words upon the box was not a recommendation of the pastille, but Mr. Dennis said his appeal would be on a point of law.

The Chairman then said it seemed very trivial to attack a respectable chemist as had been done, and the majority of the magistrates thought this was a frivolous appeal. But they would state a case as asked, though they hoped the Inland Revenue authorities would undertake the cost of the case.

Mr. Dennis said that the question of costs would be for the High Court, but he was understood to promise that the appeal should not involve Mr. Sanguinetti in further expense.

At Marlborough Street Police Court, on March 26, before Mr. Denman, Messrs. J. M. Davis and Sons, Princes Buildings, Coventry Street, Piccadilly, were charged, at the instance of the Inland Revenue authorities, with an alleged infringement of the Patent Medicine Act, George III., cap. 150, sec. II., by selling medicine without the article being duly stamped. Prosecuting counsel said that the article in question was sold in bottles, and was called "Porto Coca Gargle." It was held out as a tonic gargle for the throat and a voice-producer, and he contended that it came within the Act.

Mr. Davis, who defended in person, submitted the Porto Coca Gargle did not come within the scope of the Act. They had never claimed it as a cure for any malady, nor had they claimed any proprietary rights. It was simply a tonic for strengthening the voice, used by actors, clergymen, barristers, and others. The Inland Revenue, whom he had no wish to defraud, had before now, after correspondence, been persuaded that they were wrong in trying to take action against him and had withdrawn.

Mr. Denman said that he had looked over the Act. It was contended that Porto Coca Gargle came within the description laid out as beneficial to the prevention and the relief of a distemper, malady, disorder, or complaint affecting the human body. If the label said that the thing cured people it was liable to stamp duty, but, with regard to the statement that was on the label, anybody could sell anything to gargle with—even water could be used as a gargle, and he didn't think that it was held out to be more than an excellent stimulant for the voice. He was of opinion that it did not come within the section. The summons would, therefore, be dismissed.

Alleged Recommendation on Window-Card.

At the Police Court, Great Eastern Road, Stratford, on April 5, before a bench of five magistrates, presided over by Mr. F. G. Robinson, Mr. W. Goyne Stevens, 677, Romford Road, Manor Park, E., was summoned under the Medicine Stamp Acts by the Commissioners of Inland Revenue for selling unstamped an article alleged to be liable to duty.

Mr. B. Hawkins prosecuted for Somerset House, and Mr. C. H. Kirby defended on behalf of the Chemists' Defence Association.

Mr. Hawkins, after explaining the *raison d'être* of the prosecution, continued that on December 23 last a Revenue officer saw in Mr. Stevens's window a card placed upon several boxes which apparently contained lozenges. The card read, "A Most Effective Bronchial, Throat, and Voice Lozenge, 4½d." The officer entered, and asked for a box of the "Bronchial Throat and Voice Lozenges." The box was labelled merely "Bronchial Troches, for directions see back," and the directions referred to were: "These troches contain nothing deleterious, and may be used freely whenever required. Suitable both for children and adults. Dose: Allow a troche to dissolve in the mouth and repeat as often as may be necessary." The information was laid under Section 2 of the Act 52 Geo. III., cap. 150, wherein a penalty of £10 was incurred if certain articles "mentioned and set forth in the schedule annexed to this Act" were sold unstamped. The question, Mr. Hawkins continued, really turned on the construction of the schedule to the Act which enumerated a number of articles specifically by name, and among these lozenges were specifically mentioned. Moreover, at the end of the schedule there was a general charge of duty which stated that liability might arise also on "all other pills, powders, lozenges, etc. . . . to be used or applied externally or internally as medicines or medicaments for the prevention, cure, or relief of any disorder," etc., if certain claims were made, and the words he relied upon in this case were "or which have at any time . . . by any public notice or advertisement, or by any written or printed papers or handbills, ... [been] held out or recommended to the public . . . as beneficial to the prevention, cure, or relief of any distemper," etc. These lozenges, which he would show contained aniseed, came under the schedule, or, failing that, were liable under the general charge of duty. The points, therefore, for the consideration of the Bench were (1) did they come under the description "lozenges"? were they (2) intended as a medicine? and were they (3) "held out" as beneficial for the prevention, cure, or relief of any disorder, etc. There would be no difficulty in proving that they were lozenges. Then whether they were a medicine or intended as a medicine could be gathered from the label on the box and the card shown in the window. The package was in the usual style, and the lozenge in the same shape as those generally sold to be used for colds. As to the recommendation, they were undoubtedly "held out" to the public by the notice in the window. Were they held out for relief or cure? It was true no specific complaint was mentioned on the box, but the Act did not say it was absolutely necessary to mention any specific complaint to constitute a recommendation. The schedule contained many medicines liable to duty which did not mention a particular complaint, such as "Bythell's Pectoral Lozenges," where the part of the body to be benefited was mentioned and not the complaint.

The Chairman: I see any number of them are mentioned.

Mr. Hawkins, continuing, said it was a very common practice to apply to a medicine the name of a part of the body and not the complaint, and instanced blood mixture, skin lotion, eye lotion, etc. Any member of the public seeing the notice exhibited by Mr. Stevens would come to the conclusion that he was recommending these lozenges for some complaint affecting the throat.

Thomas Jameson, an Inland Revenue officer, gave formal evidence of the purchase. He had tasted the lozenges, and they contained aniseed, with other ingredients.

Mr. Stevens: They contain no aniseed.

Mr. Jameson, continuing, said he had received training in the Government Chemical Laboratory, and the lozenges, in his opinion, contained aniseed.

Cross-examined by Mr. Kirby: He had not analysed the lozenges, and had never seen similar ones sold at a confectioner's.

Mr. Kirby, in replying for the defence, said Mr. Hawkins had stated exactly the chief points of the case, viz.: Were they a lozenge (as to which there could be no dispute)? Were they a medicine? and were they "held out" in the words of the schedule for the prevention, cure, or relief of any disorder? The whole case rested upon the card. In a letter from Somerset House to the defendant it was stated that liability to duty was incurred by reason of a card exposed in the window. Therefore the real points at issue were whether it was a medicine and whether it was "recommended" by the card? The ordinary meaning of the word "medicine" was something of a healing nature, but there was nothing in this lozenge which constituted it a medicine. It was true that it might be applied as a medicine, but that did not necessarily bring it within the Act. Acid drops, as sold by the confectioner, would come under the definition lozenge in the Schedule, but it would not be reasonable to say that they were necessarily sold to be used as a medicine. As to the recommendation, the prosecution must clearly show that in the words of the Act the lozenge was "held out" by a "public notice or advertisement . . . affixed to or delivered with the packet," but is was obvious that the card was not fixed to the package sold. One of the difficulties of the prosecution was to show whether the lozenge was intended for prevention, or cure, or relief; the card did not say one or the other, and the Revenue authorities had stated that the case rested upon the card. The general charge said the article must refer to some "distemper, malady, ailment, disorder, or complaint." What complaint were the troches said to relieve? Nothing could be found on the card to bring the lozenges within the Statute, and it was necessary to read into the card something which was not there to bring the lozenges within the Act. Mr. Kirby then referred at some length to several descriptive names, such as cough lozenge and muscle liniment, which were clearly not within the Act, and for the use of which Somerset House had never sued for penalties. He also quoted several instances from Alpe's treatise on these Acts as showing that, in his opinion, the holding out must be for some specific ailment. Coming down to the card in question he pointed out that "throat" was not a disease, nor was "voice" even a part of the human body. The lozenge might be applied to a particular part of the body, but that was not sufficient to bring it within the Act.

The Chairman: You recommend the lozenge by implication?

Mr. Kirby said that speakers and singers might want a voice tonic.

The Chairman: You don't question the facts but the application of the Act.

Mr. Kirby, continuing, said that was so, and pointed out that the articles in the Schedule mentioned by Mr. Hawkins would be liable under some other part of the Act. Bythell's Pectoral Lozenges were clearly liable, not for the word "pectoral," but because of the special ownership claimed by the use of the possessive case in the title.

The Chairman: If this box had been "Stevens," they would have been liable?

Mr. Kirby replied yes, and concluded by asking the Court to dismiss the summons on the ground that the lozenges (1) were not a medicine; (2) that the recommendation, if such, was not affixed to the package; and (3) that there was no "holding out" within the Act.

Mr. Hawkins, in replying to the points raised by Mr. Kirby, said the case of Smith *v.* Mason showed it was not necessary to affix a public notice to a package.

Mr. Kirby: Is the card a "public notice"?

Mr. Hawkins said they always regarded a notice in the window as a public notice. They had to take the meaning which a person entering the shop would put upon the card; that would be that the lozenges were good for bronchial affections or relaxed or inflamed throat. He would point out that Mr. Alpe's book was not a legal authority.

The Chairman: We do not take any notice of it.

Mr. Hawkins pointed out that the Board did regard "cough lozenges" as liable, but they recognised the public danger of not allowing the chemist to use some distinctive name. Provided the chemist did not go beyond that the Commissioners did not enforce the duty.

Mr. Kirby pointed out that at Brentford the magistrates had unanimously decided that a label "Pure Gum Pastilles—Influenza" was not liable.

The Bench retired to consider their decision, and on returning the Chairman said that their unanimous decision was that the lozenges were not liable, and that the summons would be dismissed. In reply to Mr. Hawkins, he said they would consider an application to state a case if asked to do so.

LONDON CHEMISTS' ASSOCIATION.

A meeting of the General Purposes Committee of this Association was held on Wednesday, April 9, at Anderton's Hotel, Fleet Street, the chair being occupied by Mr. A. Cooper, President of the Association.

It was decided after a brief discussion that representatives of the trade Press should be admitted to future meetings of the Committee, and the Hon. Secretary was requested to notify the Press of such meetings.

The minutes of the last meeting having been read and confirmed, the Hon. Secretary reported that the Sub-Committee appointed for the purpose had met and drawn up a circular letter to London chemists setting forth in detail the objects of the Association. The circular was then read, and submitted to the General Committee for approval, and the Secretary was instructed to have it printed and circulated as soon as possible.

Mr. Truman reported that the Committee for South London had met, and steps were being taken to arrange for a general meeting of South London chemists at an early date.

The Vice-President, Mr. Glyn-Jones, then introduced a discussion on the use of trade names on poison labels, in which Messrs. Truman, Pentney, Campbell, Harrington, Pond, Bunker, Burton, and others took part, but no decision was arrived at.

Mr. R. H. Jones proposed, and Mr. Burton seconded, the name of Mr. John Humphrey as a member of the Association and he was duly elected.

There was no other business.

WOLVERHAMPTON CHEMISTS' ASSOCIATION.

At a meeting of this Association, held at the Star and Garter Hotel, Victoria Street, Wolverhampton, on Monday, April 7, the chair was taken by Mr. S. Phillips, and

Mr. F. H. Alcock, of Birmingham, gave an account of some experiments which he had made upon

Tincture of Opium,

and the marc therefrom. Reference was made to the usual tests for tincture of opium, such as specific gravity and amount of total solids, which, however, do not vary greatly in a properly prepared article, nor would the morphine content be found unsatisfactory nowadays.

It had been possible to detect a serious error in the preparation of tinctura opii made by a young pharmacist, by the B.P. process, by determining the amount of sulphate present in a definite volume of the tincture, the normal amount differing not greatly and within a limited range. The present solvent for tinctura opii is weaker than the former one, and probably that accounts for the difficulty in keeping the preparation clear and bright. The aqueous solvent extracts substances which, on the subsequent addition of spirit, cause continuous precipitation. If the sediment collected on a filter be dried and examined, it will be found to contain distinct evidence of crystalline matter, no doubt of mineral origin. From experiments which the author has made he concludes that the wholesale manufacturers in all cases extract the whole of the morphine in preparing the tincture, though complaints had been made of the difficulty experienced by retailers in making this preparation in small quantities in accordance with official instructions.

BRADFORD CHEMISTS' ASSOCIATION.

A meeting of the Bradford and District Chemists' Association was held on Tuesday, April 8, at the Royal Hotel, Bradford. Mr. Arthur Hanson presided, and there was a good attendance.

Questions for the Pharmaceutical Council Election.

Mr. A. H. Waddington opened a discussion on the management of the *Pharmaceutical Journal* by proposing that the following resolution be adopted:—

> That the Journal being the only tangible return for the subscription of country members of the Society, this meeting is of opinion that a liberal expenditure upon it is appropriate; inasmuch, as the production of the Journal is an important part of the Society's work, for the efficient conduct of which the Council in its representative capacity, and the editor in his departmental capacity are severally responsible; and it strongly deprecates any curtailment of the Journal which might, in any way, tend to impair its usefulness.

He said he did not know whether they had noticed the fact, but it was certain that the efficiency of the Journal had been impaired of late. The number of pages of matter had been curtailed, and they now never had more than twenty pages in any week's issue, whereas they had in previous issues had four or, perhaps, eight pages over the twenty, according to the work which was going on in the pharmaceutical world. He could not tell them why the curtailment had been made unless it was because the Council, or the Sub-Committee which had charge of the Journal, had been under the impression that the expenditure on it was increasing to too great an extent. They all knew that the Pharmaceutical Council had been endeavouring as far as it could to foster local associations with a view to getting as many chemists as possible into touch with the Society. One of the main influences in the increase of these local associations had been the reporting of the proceedings of the associations, because chemists in towns where there was no association had read what their friends elsewhere were doing, and had felt stimulated to form new associations. Mr. Newsholme himself was in favour of this increase of local associations, and it was an undoubted fact that the increase of local associations had resulted in the increase of members of the Pharmaceutical Society, and therefore if they were going to have the reports of the local associations curtailed or held over for a week, or in some cases for nearly a fortnight, there was no doubt that it would have a deterrent effect on the organisation of chemists throughout the country. That being so, it was particularly important that the official journal should be maintained at the highest possible pitch of efficiency. This was not merely his own opinion, nor was he alone in pressing the matter upon the attention of the Pharmaceutical Council. If they went back to the proceedings at the annual meeting, they would find Mr. Carteighe, Mr. R. A. Robinson, and others had expressed opinions in favour of a distinct advance in the conduct of the Journal. He had in his possession an extract from a speech in which Mr. Carteighe said that they had, like good business men, sunk a part of their income for the year in order to make the Journal fulfil the condition of being the best pharmaceutical journal in the world, and in order that it might have more claim upon the attention of advertisers, as other journals had which were run purely upon trade lines. He also said it had been well-spent money, and that the Journal was a credit to the Society, and the subscribers were getting the best journal possible. That was about 1895, but things had changed since then. He dare say they would remember that a few years ago the *Chemist and Druggist* began to be issued as a weekly journal. It was after that time that the *Pharmaceutical Journal* altered its tactics entirely, and increased its expenditure. They were compelled to do this in order to keep themselves alive. The cost of the Journal then was about 12s. per member, an exorbitant cost of more than half the total of each member's subscription. Since that time the cost of the Journal had steadily decreased until the year 1900, when it was only 7s. a member. But he thought they should look upon this question of the production of the *Pharmaceutical Journal* rather in the light of the argument which he had used in his resolution that it was the only tangible return that country members got for their subscription to the Pharmaceutical Society. Certainly the Society did look after trade interests to a certain extent, and they periodically sent down their officials, and fines were imposed for illegal trading, but owing to the non-publication of many prosecutions the majority of chemists did not know that the Society was doing anything for them, and were justified in regarding the Journal as the only tangible return that they were getting for their money. Therefore they had a right to demand that the Journal, as being their property, should be maintained in as efficient a manner as possible, and that there should be liberal expenditure for that purpose. The *Pharmaceutical Journal* ought not only to be quite as useful as the *Chemist and Druggist;* it ought to be the best pharmaceutical journal in the world. The London members, of course, had more for their money than the country members had. They had the use of the Museum and Library, and were able to attend the evening meetings and the annual meeting, and there were other privileges in which the country members could not participate. What he feared was that few chemists realised the importance of the property they had in their Journal. The accounts were never seen by the majority of the chemists of the country. They never knew, for instance, what amount of money was being paid to the Journal for advertisements. Chemists in the main did not now see these details. The Calendar got into very few hands, and they knew very little of what their representatives on the Council were doing, as they had a perfect right to know. In reference to his recent letter in the *Pharmaceutical Journal* about these matters, he had had a correspondence with Mr. Bremridge, but could not get any satisfactory reply from him, and the tone of Mr. Bremridge's last letter was such that he had written in reply to say that it was evident that it was no use his wasting his time in further correspondence. Of course, it followed as an inevitable result, if the Journal went down in its interest the advertising connection would also go down. If matter was to be published a week late, and after the chemist and druggist had read it in other journals the previous week, he would ignore his *Pharmaceutical Journal*, and throw it on one side when it reached him, and then when it was of little or no value to the reader it would be of no value to the advertiser. In that way the Journal would cost more to the Society for an inefficient production than it would cost for an efficient production. The Journal should be a first charge upon the membership subscription, and be one to which every pharmacist in the country would turn to find everything that was going on in the pharmaceutical world. He hoped that other associations would take this matter up, so that there should be some satisfactory outcome of this discussion. He also moved:—

That the Secretary be requested to write to each candidate at the forthcoming election for the Pharmaceutical Council, asking for answers to the following questions:—(1) Will you, if elected to a seat on the Pharmaceutical Council, do all in your power to prevent any curtailment, and increase the efficiency, of the *Pharmaceutical Journal*? (2) Are you in favour of giving fuller information *re* the proceedings of the Council, so that all the members of the Society may know what their representatives are doing?

The President said it seemed to him that if the Journal were to be cut down there would be nothing left to interest country members in the Society. It was one of the advantages held out to every newly-qualified chemist when he was asked to join the Pharmaceutical Society that he would get the Journal. That was always the first thing mentioned to him as a return for his money. He thought that every chemist who was a member of the Pharmaceutical Society ought to make it understood that he regarded himself as a part-proprietor of the Journal. How many of the members were there in Bradford, or anywhere else in the country, who would pay their guinea if it were not for the return which was offered in the Journal? He dared say that there would not be half the members in England who would pay it.

Mr. Newboult: Do these gentlemen who are in favour of curtailing the Journal give any reasons for their conduct?

Mr. Waddington: I do not know that they do except that they say there is an adverse balance.

The President: I think that there is a great deal of reason for the opposite policy, and that it ought to have been looked into years ago, and it is quite time there was a new policy.

Mr. Waddington: In saying that there is an adverse balance they take the cost of paper and printing, and commission and payments to contributors, and setting that against the return from advertisements they say that there is a loss on the Journal.

The President: Then, in effect, they say that when you send your guinea to Bloomsbury Square you pay nothing for the Journal?

Mr. Waddington: The difference between the cost of production and the revenue from advertisements is considered as a loss to the Society, instead of looking upon it that the cost of production is the return for subscriptions and that the income from advertisements is practically a bonus paid to the individual members, which will amount to about 18s. a year per member.

Mr. Noble: They presuppose that the Journal is given away?

The President: That you pay nothing for your Journal, whereas when you join the Journal is put forward as the great inducement. I remember that quite well.

Mr. Rogerson: The *Chemist and Druggist* will give you more for 10s. 6d. than the Pharmaceutical Society will give you for a guinea. That is what it comes to.

The President: Decidedly.

Mr. Waddington: But that ought not to be.

The President: No, not if it was conducted properly.

Mr. Newboult: Do you think one of the reasons is that some of them would like the Journal to fall behind so as to give a better chance for the *Chemist and Druggist?*

Mr. Waddington: I am afraid I dare not say so if I think it.

Alderman Dunn: I am afraid some of them would like it to be so.

Mr. Newboult: Thank you; my question is answered. I am much obliged.

Mr. Marshall: Do you advocate that the expenditure on the Journal should be increased per member?

Mr. Waddington: What I suggest is that if the Journal is maintained in a state of efficiency the advertising income will increase in proportion, as it has previously done. When the Journal was improving the advertising income was increasing.

The President said he should think that if the Journal was put upon proper lines they could make it pay well; pay for itself very nearly. It appeared to him that there was a great deal of money wasted.

Mr. Marshall said that they might depend upon it that of the 10s. which they paid to the *Chemist and Druggist*, 5s. was profit, and why could not the *Pharmaceutical Journal* be worked upon the same sort of lines?

Mr. Waddington said that from its official position the *Pharmaceutical Journal* could not possibly be on all fours with the *Chemist and Druggist*, and to that extent was placed at a disadvantage. The Journal could not give trade puffs in the same way.

Mr. Marshall: I know what you mean; you mean Daisy, etc.

Mr. Waddington: Yes, that is what pays the *Chemist and Druggist.* They must not, of course, consider the whole guinea as being a subscription for the Journal, because there was the upkeep of the Society as well. They used all the money they got and at one time had an adverse balance as well.

Mr. Rogerson: I think it is likely that they will have another adverse balance.

Mr. Wilcock: The guinea does not pay the expenses of the Society, of course; it gets the bulk of its income from the examinations.

Alderman Dunn said he did not quite see how the questions to candidates were going to produce the sort of effect which Mr. Waddington seemed to desire. The first question was one to which every candidate could say "Yes" without the slightest hesitation. There would be considerable differences, of course, as to what would increase efficiency. Some men would prefer purely scientific matter and others would prefer trade matters entirely. His own recollection was that twenty pages had been the standard quantity for the Journal for years, and that four or eight pages more had only been added on special occasions.

Mr. Marshall: To what extent would you limit the expenditure on the Journal?

Mr. Waddington: I should not limit the expenditure.

Mr. Marshall: It would not matter to you if they got the cost up to 15s. per member for the Journal?

Mr. Waddington: No, not if they kept the Pharmaceutical Society going through it.

Alderman Dunn said there were frequently items in the Journal of purely scientific interest, which were of no interest to 90 per cent. of the readers of the Journal. It occurred to him that even those who were interested in such matters would take the purely scientific papers which were concerned, and therefore did not need the use of the Journal for such matter. Items such as the reports of the Society of Chemical Industry and scientific extracts from the German papers were of very little interest to pharmacists as pharmacists.

Mr. Waddington said that was a feature of the Journal which appealed more to chemists who had passed the Major examination than to those who had stopped at the Minor, and it was a feature which distinguished the Journal from the *Chemist and Druggist* and the *British and Colonial Druggist.* They ought not, he thought, to forget that they had subscribing members of the Society who would appreciate that sort of thing and had a right to have it. He held this view, though the matter referred to was of no interest to him.

Alderman Dunn said that he was not sure that the reports of local associations were always of much value. The Editor would know the value of them no doubt, but he could quite understand that they were often cut down because they were only of local interest.

Mr. Wilcock said it was not altogether a question of these reports being cut down, but they were often held over and appeard a week or a fortnight after date. In that week's Journal, for instance, there was a report of the Wakefield dinner, which was held three weeks ago, and the report of it was in the *Chemist and Druggist* the week before.

Mr. Waddington said that was the fault of the Wakefield Association which did not ask for reporters.

Alderman Dunn: After our last meeting the *British and Colonial Druggist* had the report of the meeting in and neither of the others had it until the following week.

Mr. Wilcock said he found the reports of the meetings of the local associations the most interesting reading in the papers.

Alderman Dunn said he quite agreed that if the reports of meetings were worth publishing the publication should be immediate. He was afraid, however, that this was a matter of detail as between the Committee who had the management of the paper and the officials, and one upon which they were hardly in a position to judge of the real merits of the case. Whilst he quite agreed with the principle of the first of Mr. Waddington's resolutions, he felt that they should be more definite in what they suggested or else the resolution would be likely to fail of its purpose.

Mr. Waddington said his second resolution would supplement the first, and would greatly help to make its meaning plain.

The President: You are a member of the Pharmaceutical Society, Mr. Dunn. Are you content to read the full report of things, which the Pharmaceutical Society ought to let you know through the Journal, in the *Chemist and Druggist* instead of in the Journal?

Alderman Dunn: Can you point to anything concerning the Society which is more fully reported in the *Chemist and Druggist* than it is in the Journal?

Mr. Waddington: I can tell you that you frequently find reports in the *Chemist and Druggist* which do not appear in the Journal until the following week.

The President: That is so, and it is not right that it should be so.

Mr. Newboult said he had great pleasure in seconding Mr. Waddington's resolution as to questions to candidates. When the matter was first mentioned a week ago he did not see his way clear, but Mr. Waddington's explanation that night had covered as much of the ground possibly as they were able to cover. He agreed with Mr. Waddington that the efficiency of the Journal should be maintained at all costs.

Both resolutions were then put and carried without further discussion.

Alderman Dunn said that as the subject of questions to candidates had been specially left for that meeting, he had also some questions to suggest. They were as stated in the following resolutions, which were subsequently carried.

Experience having demonstrated that the mere restriction to qualified persons of distinctive titles, along with power to sell and dispense such poisons as are enumerated in the schedule to the Pharmacy Act, has failed to secure adequate protection to the public, by reason of the unrestricted sale of potent drugs and medicines (other than scheduled poisons) by unqualified persons in the form of companies and otherwise, will you introduce to the Council, or support, some scheme by which the sale and dispensing of drugs and medicines, especially those of a potent character, shall be restricted to registered chemists.

The keen competition of so-called drug stores, controlled by unqualified persons, having seriously tended to render the calling of chemists and druggists unremunerative, do you think it proper at the present time to place further difficulties and cost upon young persons contemplating qualifying for registration by the institution of a compulsory curriculum or otherwise? And will you vote for the postponement of any proposal for the institution of such a curriculum until more adequate protection be secured for those qualifying by examination?

Mr. Waddington said he supported the first resolution but opposed the second. The question of the curriculum was not at present before the Society.

Mr. Noble said the question might become active before the time was up of those who were about to be elected. Three years was a long time.

Mr. Wilcock observed that there would be an opportunity of bringing the question before one-third of the Council every year.

Alderman Dunn said that before they had another opportunity of testing the opinions of the present candidates they might have decided the question.

Mr. Waddington said the Council would never decide such a question without consulting the whole body of the trade.

Mr. Rogerson said even if there was never a curriculum they could not secure the adequate return that the resolution spoke about.

The President said he should be pleased to second the first resolution.

Alderman Dunn said he felt that practically all potent drugs ought to be sold only by qualified persons.

The President said that he felt that also.

The first of Alderman Dunn's propositions was then put and carried unanimously.

Alderman Dunn said he hoped they would express an opinion also upon the other matter. They often heard of people having difficulty in getting men nowadays, and the question, therefore, was, What inducements had they to offer a youth to enter the calling?

Mr. Carson seconded the resolution.

Mr. Waddington thought that they would make a mistake in passing that resolution, because he gathered that there was no probability of a curriculum being brought before their consideration for a long time to come.

After further discussion, however, the resolution was carried without opposition.

Proposed West Riding Federation.

The question of the expediency or otherwise of a West Riding Federation was then considered.

The President said he had been greatly astonished to read the remarks made by Mr. Broadhead about the Bradford Association. He thought that those remarks were quite uncalled for, and could not imagine what Mr. Broadhead was thinking about to allow himself to make them.

In the course of a discussion as to the advantage of federation, in which Alderman Dunn opposed the idea as having no apparent need and Mr. Waddington strongly supported it, Mr. Marshall pointed out that such an organisation would be useful for such purposes as the election, and to deal with questions like those which they had been discussing.

The President, who spoke in support of the principle of federation, proposed:—

That this Association, having further considered the proposed formation of a federation of West Riding chemists, expresses its approval of the scheme suggested by the ex-President of the Dewsbury Association.

The resolution was seconded by Mr. Wilcock and carried without dissent.

PHARMACEUTICAL SOCIETY OF IRELAND.

The monthly meeting of the Council was held on Wednesday, April 2, when the President (Mr. George Beggs) took the chair.

Compounding in Hospitals and Poison Bottles.

The President said a number of replies had been received in reply to the circular letter which the Council had sent out on the above subjects.

The Registrar read the replies, as well as a letter received from the Assistant Secretary of the Local Government Board, dated March 25, which contained the following:—

> I am directed by the Local Government Board for Ireland to acknowledge, with thanks, the receipt of your communication of the 20th instant, enclosing a memorandum drawn up by the Council of the Pharmaceutical Society of Ireland relative to the dispensing of medicines by unauthorised persons in hospitals and public dispensaries, and in reply I am to inform you that the Board do not sanction any such practice in any of the institutions under their control. Article 16* of the Board's General Rules for the Government of Dispensary Districts prescribes the qualifications which the Board require for any person appointed by a Board of Guardians as compounder of medicine in a dispensary district. If, as stated by your Council, there are cases of evasion of the above-mentioned regulation the Board would be obliged by your supplying specific information as to the places and the individuals referred to. I am at the same time to inform you that the Board are fully in sympathy with your suggestion as to the necessity of dispensing poisonous liniments and lotions in proper poison bottles, and that they have provided in their prescribed list of medicines such bottles for the use of medical officers of dispensary districts, who can requisition them as required.

The President thought the letter of the Local Government Board was very satisfactory, and

The Vice-President moved that all the letters be referred to the Law Committee. What the Council wanted was to have the work done by properly qualified men. There was no wish to attack the qualifications of general medical practitioners as compounders, but it was advisable that they should be required to show in some way that they had practical experience in compounding before they undertook to do it.

That was agreed to.

Recognition of Classes.

The Principal of the Municipal Technical Institute, Belfast, applied in a letter for the recognition by the Council of the materia medica and botany classes held there, and the application was granted.

The Preliminary Examination.

A letter was read from Dr. James Henry on the subject of the conduct of the Preliminary Examination.

The Registrar stated that the Preliminary Examination held on the preceding day commenced at eleven o'clock a.m. and finished at half-past seven p.m.

The President said the strain caused on the candidates by such long hours was too great. The Council would be acting wisely in extending the examination over two days. It would fall in with Sir George Duffey's ideas, and it would be an advantage to the students and tend to their being better qualified.

The Vice-President said that he and the President had a conference with the examiner on the previous day as to the regulations that should be adopted with a view to rendering the Preliminary Examination more convenient and efficient. They thought that it should extend over two days, the first of which should be devoted to papers and the second to *vivâ voce* examination. Both Dr. Henry and Mr. O'Sullivan said they entirely approved of such an arrangement. They thought that the examination in Euclid should be altogether *vivâ voce*, and they also thought it desirable that there should be a small committee to confer with them at the conclusion of the examination. With regard to the Licence Examination, the first day should be for papers, the second for *vivâ voce* examination, and the third for examination in practical chemistry and practical pharmacy. He (the Vice-President) moved that a committee be appointed to confer with the examiners.

This was seconded and agreed to.

Pharmacy Prosecutions by the Police.

Messrs. Casey and Clay, Solicitors to the Society, forwarded the following letter which they had received from the Clerk of the Privy Council of Ireland:—

> March 11, 1902.
>
> Gentlemen,—Referring to your letter of the 11th of January last, and enclosures on the subject of the detection and prosecution by the police of offences under the Pharmacy Acts, I am directed by the Lords Justices to inform you that, the matter having been laid before the Law Officers of the Crown, their Excellencies are advised that the police may prosecute for offences under these Acts. Instructions have accordingly been issued to them to do so in future in all proper cases.—I am, etc.,
>
> J. B. Dougherty.

The President thought the letter was very satisfactory. The Council had been striving for a long time to gain this point, which would be a material help and a saving of the funds of the Society.

Inaccuracies in the Registers.

A letter was read from Mr. Samuel Gibson complaining of inaccuracies in the registers, and making suggestions for their correction.

The President said the matter was one that could easily be dealt with by sending a circular to the licentiates in each town, asking them to state how many pharmaceutical chemists and registered druggists are there. But it was hard to be accurate when the Registrars of Deaths did not send notice of the deaths of persons for six and twelve months. Notifications of deaths which should come direct were received indirectly through other quarters.

It was decided to send out a circular asking for information, as suggested.

SOCIETY OF CHEMICAL INDUSTRY.

At the annual meeting of the Manchester section of this Society, held on April 4, the chair was taken by Dr. Grossmann, and among other business

Mr. J. M. Irving read a paper on an

Analysis of the Snow

which fell in Manchester in February last. He took 100 square inches to a depth of 1 inch at Crumpsall, and found that over a square mile three tons of soot fell during the nine days the snow remained. This would represent 300 tons over an area of 100 square miles round the Manchester Town Hall. The composition of the soot was as follows:—Carbon, 48·6; grease or oil, 6·9; ash, 44·5. The proportion of ash was very much higher than in ordinary soot, which he attributed to the more complete burning of the coal. The grease or oil was about the same as in ordinary soot. It smelt like burning wood. This question of dealing with soot would have to be seriously dealt with ere long. The present state of things could not go on for ever. A remedy would be in increasing the use of coke, gas, and electricity, especially on the part of householders, and the substitution of gas engines for steam boilers. Gas should be sold at 1s. per 1,000 cubic feet.

Dr. Knecht, it appeared, had taken a sample of snow in the centre of the city at the same time, and gave the result of his analysis, which showed that the amount of soot and *débris* was greater than in the suburbs. There was arsenic in abundance.

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[*] Article 16 of the Local Government Board's General Rules for the Government of Dispensary Districts is as follows:—"The qualification of every compounder of medicine to be appointed by the guardians for the service of any district shall be as follows:—"(1) He shall have obtained the licence of the Apothecaries' Hall, Dublin, or from the Society of Apothecaries, London, or a certificate of competency to compound medical prescriptions from the Pharmaceutical Society of Great Britain or of Ireland; (2) he shall have reached the age of twenty-one year."

Election of Officers.

Mr. Ivan Levinstein was elected Chairman of the Section for the ensuing year, and Dr. Bailey Vice-Chairman, with the following new members of the Committee :—J. Allen, R. Clayton, J. Hubner, Dr. H. Levinstein, and W. J. Pope.

CAMBRIDGE PHARMACEUTICAL ASSOCIATION.

At a meeting of this Association, held on Friday, April 4, at the Bull Hotel, Cambridge, Mr. E. Saville Peck, M.A., in the chair,

The Secretary (Mr. B. S. Campkin) read correspondence from which it was understood that one chemist had definitely resolved not to close early during the May term. Another firm wrote that they did not see their way to close early on Thursday unless all their fellow chemists did likewise. They thought it would be against the interests of their business to do so. However, if all their *confrères* agreed to close they would be included in the arrangement. One chemist, who trades in the centre of the town, thought it best for the May term that chemists should be left to do as they liked.

After a prolonged discussion, the Chairman moved that in consequence of several firms having expressed their desire to remain open unless all closed, and as that appeared improbable, it should be recommended that the early closing arrangements be suspended after Thursday, April 18, during the remainder of the May term.

Mr. Parsons seconded the motion, but Mr. White thought the word "suspended" was too binding. It would preclude chemists in any particular district arranging among themselves. He moved the following as an amendment :—

> In consequence of several firms having expressed their desire to remain open unless all closed, and as this appears improbable, the Pharmaceutical Association feel they cannot at present make any further recommendation during the May term, but leave it entirely to the option of the chemists after April 10.

Mr. Cook seconded the amendment, which was carried.

GLASGOW CHEMISTS' ASSISTANTS' AND APPRENTICES' ASSOCIATION.

At the last meeting of the session, held in the rooms, 94, West Regent Street, on Friday, April 4, Mr. J. P. Gilmour, President, occupied the chair, and Mr. J. Lothian, Ph.C., gave a lecture entitled, "The Eternal City," in which he traced the history of the city of Rome from ancient, through mediæval, to modern times. These three great periods were illustrated, chiefly with respect to their architecture, by a series of beautiful lantern slides. Mr. Lothian's descriptions gained much in local colour and vitality from the fact that he had personally visited the scenes to which they referred. On the motion of the Chairman, a warm vote of thanks was accorded to the lecturer, and to the lanternist, Mr. B. Cockburn.

NEWCASTLE CHEMISTS' ASSOCIATION.

At a special meeting of this Association held on Wednesday, March 26, Mr. James Paterson's proposals concerning Government grants and pharmaceutical education were discussed, the subject being introduced by Mr. T. Maltby Clague. After discussion, the following resolutions were adopted :—

> (1) That this Association decides to approach the Technical Education Committees of the Northumberland County Council, the Durham County Council, and the Newcastle City Council, and urge upon them the desirability of giving grants in aid of students in pharmacy, by paying their fees, providing scholarships or prizes tenable at the school which the student may select.
>
> (2) That this Association appoint a small committee to inspect the North of England School of Pharmacy with a view to reporting on its equipment, curriculum, etc., and as to the advisability of its being definitely placed under the patronage of the Association with a visiting committee.

Messrs. R. Wright (President), W. Atkins (Hon. Secretary), T. M. Clague, and G. F. Merson were appointed a committee to approach the various technical education authorities.

NORTHAMPTON CHEMISTS' ASSOCIATION.

At the annual meeting, held on Friday evening, April 4, there was a good attendance, and the President (Mr. W. McKinnell) occupied the chair.

The Secretary read his report and gave the balance-sheet, which showed a sum of £1 4s. 11d. to the good.

The President moved the adoption of the report and balance-sheet, and congratulated the Secretary on his able and comprehensive report.

Mr. Flinton Harris moved—

> That the best thanks of this Association be given to the retiring President for his arduous labours in founding the Association, his constant attendance at, and able guidance of, the meetings during the past two years, and his hospitality to the members on the occasion of the two annual dinners.

This was seconded by Mr. E. C. Ashford, and carried unanimously.

Mr. W. McKinnell replied thanking those present for their kindness. He then went on to say that he had a very pleasing duty to perform, and that was to propose his old friend, Mr. W. D. Mayger, as President for the next term. This was seconded by Mr. Armitt. There was a strong desire expressed by members present that Mr. McKinnell should continue to occupy the chair, but that gentleman, while thanking them said he should still feel the greatest interest in the Association, and do his best to attend meetings, but felt he must be relieved of the chair.

Mr. Mayger heartily thanked the proposer and seconder for their kindness, but strongly urged his wish to be excused from the duties of chairman, though eventually he acceded to the unanimous wish of the members.

On the proposition of Mr. Ingle, seconded by Mr. D. McKinnell, Mr. Armitt and Mr. E. C. Ashford were elected vice-Presidents.

Mr. W. McKinnell, in a very kindly and appreciative speech moved that a hearty vote of thanks be given to the Secretary, which was carried most enthusiastically.

Mr. Cowdery was then re-elected to the joint offices of Secretary and Treasurer.

Mr. Flinton Harris, in a most thoughtful speech, advocated general early closing amongst the chemists of Northampton. He felt that in these days it was necessary for all to have time for recreation and rest from business.

The discussion was adjourned till April 18.

Obituary.

Patten.—On April 3, James Hinde Patten, Chemist and Druggist, Newhall, Burton. Aged 68.

Stevenson.—On April 8, John Stevenson, Chemist and Druggist, Whitby. Aged 84. Mr. Stevenson was the Divisional Secretary of the Pharmaceutical Society for Whitby, and had been a member of the Society since 1869. He was a member of the North Riding Council, and was a J.P. for the North Riding. Mr. Stevenson had been in business at Whitby as a chemist and a mineral water manufacturer for a great many years.

Walter.—On March 29, James Robert Walter, Chemist and Druggist, Glasgow, formerly of Kirkwall. Aged 30.

Watts.—On April 3, John Watts, Chemist and Druggist, Landport. Aged 56.

Williams.—On April 3, William Williams, Chemist and Druggist, Llanfyllin. Aged 62.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

MONOSODIC DIORTHOPHOSPHATE. H. Giran finds that the crystals which appear on the sticks of commercial metaphosphoric acid kept in imperfectly closed bottles are composed of a new sodium hydrogen phosphate, $NaH_5P_2O_8$, and not, as stated by E. Zettnow, a peculiar variety of pyrophosphoric acid. The composition of the sticks themselves is found to correspond with the formula $NaPO_3+HPO_3$, which, by combining each with one molecule of H_2O, gives the new salt $NaH_5P_2O_8$, or, it may be, a combination of H_3PO_4 and NaH_2PO_4.—*Comptes rend.*, **134**, 711.

INHIBITION OF CHEMICAL REACTIONS. S. W. Young has previously directed attention to some very curious phenomena which show themselves in the oxidation of solution of stannous chloride by means of free oxygen, the phenomena consisting in very marked reduction of the rate of the oxidation as a result of the presence of relatively small quantities of poisonous substances, especally alkaloids. The results of further investigation of these curious actions are now recorded, a solution of sodium bisulphite being used for the purpose of the experiments, because the reaction between stannous chloride and free oxygen was found to be too complicated, taking place in two stages. It is shown that only oxidations by means of free oxygen are subject to inhibition by foreign substances, and that probably all organic substances possess the inhibitory power. But it is also possessed by potassium cyanide, hydroxylamine, and ammonium salts. The inhibitive effect is not instantaneous, but develops somewhat slowly with the oxidation of the solution, while the limit of the dilution at which substances still show inhibitive effects differs for different substances.—*Journ. Am. Chem. Soc.*, **24**, 298.

SILVER NITRATE TEST FOR OLIVE OIL. L. M. Tolman states that nearly all the samples of salad oil examined by him have given a brown coloration with silver nitrate unless purified as follows:—To about 25 C.c. of the oil add 25 C.c. of 95 per cent. alcohol, heat gently, and shake vigorously; then allow to stand until the liquids separate, decant as much of the alcohol solution as possible, and wash the residue, first with 2 per cent. nitric acid, and finally with water. Cottonseed oils thus treated are said to react with undiminished strength on silver nitrate, while olive oils which before treatment gave deep brown colorations show no coloration after treatment and do not reduce the silver solution at all. The free fatty acids and other products of rancidity, which are evidently the cause of the brown coloration with silver nitrate, are dissolved by the alcohol used in the process of purification, but the reducing principle of the cottonseed oil is not affected by the treatment with alcohol. The reagent was prepared by dissolving 2 Gm. of silver nitrate in 200 C.c. of 95 per cent. alcohol, to which 40 C.c. of ether and 2 drops of nitric acid were added. In applying the test, 10 C.c. of oil, 10 C.c. of amyl alcohol, and 5 C.c. of the reagent are mixed in a test-tube, the amyl alcohol being used to dissolve the oil and thus secure a much better mixture with the reagent. Half the mixture is reserved for comparison; the other half is heated for ten minutes in a boiling water bath and then compared with the unheated portion. The same method can be applied to lard or other fats.—*Journ. Am. Chem. Soc.*, **24**, 396.

CALCIUM SULPHO-ICHTHYOLATE. A. Hegland prepares this salt as follows:—Ammonium sulpho-ichthyolate, 100, is dissolved in water, 100; calcium chloride, 20, is similarly dissolved in lime water, 200; the lime solution is poured into the solution of ichthyol with constant stirring. The precipitate thus formed is allowed to subside, the supernatant liquid decanted; the deposit twice washed with distilled water, collected, and dried on the water bath. The chocolate-brown friable mass thus obtained is then treated with petroleum ether, which removes the odour and taste of ichthyol, and is again dried. The resulting powder may then be massed with sufficient cacao butter into the form of tablets.—*Pharm. Zeit.*, **47**, 211.

FRENCH SAVIN. French druggists derive their supplies of savin chiefly from the south-west of France. Perrot and Mongin have come to the conclusion that the drug so obtained consists of a mixture in varying proportions of *Juniperus sabina* with *J. thurifera* var. *gallica*. They do not regard the admixture of the latter with genuine savin as serious because it appears to possess similar properties. The twigs resemble the genuine in the arrangement of the leaves, but differ in the fact that sclerenchymatous cells occur in the mesophyll. The fruit also of *J. thurifera* var. *gallica* is larger than that of *J. sabina*. The twigs of *J. phœnicea*, which have been substituted very commonly for true savin, have the leaves spirally arranged so that the section never exhibits two or four opposite leaves as sections of the two other species do. Moreover, the mesophyll of *J. phœnicea* contains numerous sclerenchymatous cells by which it can be readily distinguished from *J. sabina* as has already been pointed out by Collin.—*Bulletin des Sciences Pharm.*, **4**, 33.

LUMINOUS BACTERIA. J. E. Barnard has been investigating the conditions under which light is emitted by certain micro-organisms, which occur principally, if not entirely, in sea-water. In fluid cultures they apparently respond to any agitation or excitation so long as the supply of oxygen is maintained, and they can also be kept in a luminous condition if oxygen be continuously applied, even though they may remain at rest. In artificial cultivations these so-called "phosphorescent" bacteria grow best on a medium containing a considerable proportion of a soluble chloride in addition to the nutritive material. They will grow on an ordinary peptone-beef-broth gelatin medium, but all of them do not then emit light, and they do not emit the maximum amount they are capable of producing. The best results are said to be obtained by adding to the culture medium 2·6 per cent. of sodium chloride, 0·075 per cent. of magnesium chloride, and 0·3 per cent. of potassium chloride. In the case of fluid nutrient media some means must be taken to replenish the oxygen, as the amount held in solution is speedily exhausted. If free oxygen be allowed to bubble through the medium very brilliant cultures can be obtained, but frequent agitation can also be resorted to as a means of introducing fresh oxygen. The temperature at which the organisms grow is variable. Those found in northern latitudes can grow and remain luminous at 0° C., the optimum temperature being about 15°, at which reproduction is very rapid and luminosity at its maximum. Some organisms found in the tropics grow, however, at a much higher temperature, but none of them have an optimum as high as blood-heat, 37° C. Spectroscopically, the light emitted by these organisms is confined to a small portion of the visible spectrum, never extending into the ultra-violet or infra-red. Visually it only includes the green and blue, and photographically it extends very slightly further towards the violet.—*Nature*, **65**, 536.

CITRINE OINTMENT.*

BY PETER WYATT SQUIRE, PH.C.

Having recently had occasion to look over samples of several preparations made in 1898 as experiments in connection with the 1899 edition of the 'Companion,' I came across some specimens of citrine ointment. Nearly all the samples had undergone very considerable decomposition, varying in colour from a dark blue to a black, and all except two of them had lost every trace of a yellow colour. I was struck with the remarkable state of preservation of these two, and thinking it would form an interesting subject for a short note, I decided to exhibit them at this meeting.

These samples were prepared according to the formula recommended in my paper (*P.J.*, 1897, i., 173), and afterwards abstracted into the 'Companion,' 17th edition, and it will be noticed that they have kept very well.

The two chief objections which have been raised against the method recommended by me, which for distinction we will call the "Squire process," are (*a*) that the ointment must be, from the nature of the case, exceedingly acid, and (*b*) that "however well stirred, it is apt to be spongy." With regard to these objections, my experience is that (*a*) the product is no more acid than that made according to B.P., and such an opinion has been confirmed by treatment with petroleum ether and titration with normal soda solution as afterwards described, and (*b*) that it has no greater tendency to be spongy than the B.P. product. In fact, the percentage of spongy batches made in my laboratory are greater in the case of the official form than they are of my own. Out of a very large number of batches made by the "Squire process," only one or two had a spongy character, whereas the proportion was much larger when made according to the B.P., 1898. When my first note appeared in the *P.J.* in 1897, the process recommended for adoption in the forthcoming B.P. directed the lard and oil to be heated to a temperature of 380° F. (193·3° C.), and then allowed to cool again to 350° F. (176·6° C.), at which temperature the mercurial solution was to be added. I pointed out at the time that the mercurial solution boiled at 250° F. (121·1° C.)—namely, 100° F. lower than the temperature of the fats to which it was proposed to be added, a condition which is likely to give rise to an expulsion of the contents of the vessel. This result actually occurred in my laboratory during the course of an experiment when the stirring was momentarily stopped for the purpose of reading the temperature. The Pharmacopœia very wisely did not adopt this temperature, but dropped it about 60 degrees, which, however, still leaves it above the boiling point of the mercurial solution, but not to such a dangerous degree, more particularly as the latter is directed to be added very gradually.

Some figures have been published with the intention of showing that nitrate of mercury ointment contains a large quantity of free acid. No method of determination was mentioned in connection with them, but it is obvious that the figures must have referred to total nitric acid, practically the whole of which was in combination with the mercury. The following experiments were made with a view of finding the reaction of mercuric nitrate solution with the ordinary indicators:—

The solution used was made by dissolving 18 grammes of mercury in 15 C.c. (21·6 grammes) of nitric acid B.P. The product weighed 35·2 grammes, which is in the proportion of the following equation:—

$$3Hg + 8HNO_3 = 3Hg(NO_3)_2 + 2NO + 4H_2O,$$

that is to say, six parts of mercury to 5·04 parts of 100 per cent. nitric acid, or 7·2 parts of nitric acid B.P.

The solution was treated with normal soda solution and phenolphthalein, but the indicator did not act until the whole of the acid (either free or combined with mercury) was neutralised by the soda. The titration showed that practically the whole of the nitric acid was determined by this method. The same results were obtained by the use of methyl-orange and litmus. It is clear, therefore, that the ordinary indicators will not distinguish between free nitric acid and that combined with the mercury.

Taking the quantity of mercury ordered in the B.P. ointment, and calculating it into mercuric nitrate, which has been assumed to be its ultimate state of combination, it will work out to contain 3·7 per cent. of total HNO_3.

Some ointment (made by the "alternative method" given in my previous paper) was shaken up with a mixture of petroleum ether and water; the aqueous portion was titrated, and showed 3·78 per cent. of total nitric acid. This was clearly not free nitric acid, because as soon as the N/10 soda was added the mercury commenced to precipitate as a yellow oxide, changing very soon to a black. On attempting to determine the nitric acid in the same ointment by simply shaking with water at a temperature which melted the ointment only 0·7 per cent. HNO_3 was shown; but here again the titrated portion was not free nitric acid, as a yellow precipitate, changing to black, was thrown out as soon as the soda was added.

Two more samples are also placed on the table, which have been recently made, one by the "Squire process" and the other by the "B.P. 1898 method." The acidity was estimated in the following manner:—

5 grammes of the ointment was dissolved in 10 C.c. of petroleum ether and washed into a separator with four successive quantities of 10 C.c. of the same solvent; 50 C.c. distilled water was added, and a few drops of phenolphthalein, followed by the addition of N/N NaHO solution, until, after shaking several times, a permanent red tint was obtained. The number of C.c. of N/N NaHO used, multiplied first by 0·063 and then by 20, gives the percentage of titratable acid in the sample. Squire process sample required 3·5 C.c., which is equivalent to 4·4 per cent.; B.P. 1898 sample required 4 C.c., which is equivalent to 5·04 per cent. of nitric acid.

I do not attach much importance to the fact that the B.P. figure is so much higher than the other in the present instance, as no doubt the figures would vary in batches made by different operators; but what I do contend is that the product of the official process possesses no advantage over the "Squire process," but rather the reverse. The acidity is about the same; its keeping properties are not so good, and it is admitted to be more difficult of manipulation.

Permanganate in Veterinary Practice.—J. Stewart Wood recommends the use of permanganate of potash as a dry dressing for wounds, as he finds it even more effective used in this way than as a lotion. For ordinary wounds the permanganate should be finely powdered, and mixed with boric acid in proportion of one drachm to two or three ounces. Unhealthy wounds thus treated soon become healthy, and quickly form a firm, but not exuberant granulation. The use of the pure permanganate has been found useful in cases of open joints, as it checks the discharge of sinovia and promotes rapid healing. The wound should, however, be kept as dry as possible, because strong solutions are very irritant to the skin. It is a good plan to smear vaseline on the skin round the wound to prevent it being injured when the dressing is washed off.—*Veterinary Record*, **713**, 553.

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CHINESE DRUGS AND MEDICINAL PLANTS.*

BY AUGUSTINE HENRY, M.A., L.R.C.P., F.L.S.
Corresponding Member of the Pharmaceutical Society.

When I was, the other day, reading a paper dealing with the primitive races that exist in the interior of China, Dr. Tylor, the anthropologist, took occasion to remark on the great similarity that is observable throughout the world in the ideas and practices of man in an early stage of culture. Even in the material objects that he fashions for his use the uniformity is striking.

Similarly, in taking up the subject of the materia medica of the Chinese, we are not astonished to find that the plants and minerals employed by them in the earliest times were generally like to, often identical with, those that have been selected as drugs in Europe. There is not even at the present day any great proportion of Chinese drugs fantastic or absurd.

The most ancient herbal of the Chinese is ascribed to a mythical Emperor, called "Shen Nung," or the Divine Farmer, who is fabled to have lived in the twenty-eighth century before our era. He collected medicinal herbs, and tested them in different diseases. The herbal to which his name is attached was current about A.D. 500, and was probably compiled 400 or 500 years earlier. In it 365 drugs were mentioned, evidently one for each day of the year; but in the book as now handed down only 347 are specified, of which 239 are vegetable in origin, 65 animal, and 43 mineral. These are all, of course, native to China; but as centuries rolled on, and intercourse arose with foreign nations, drugs from distant lands came into use, as, *e.g.*, myrrh, asafetida, olibanum, opium, and, strange to say, camphor. This process is still going on, and quinine, morphia, and other European drugs have lately obtained an entry into China.

To illustrate the reasonableness of the ancient herbal, and to show its likeness to our own Pharmacopœia, I may adduce some of the vegetable drugs that are mentioned in it in the following brief list:—Liquorice, rhubarb, gentian, mallow, aconite, madder, ginger, cinnamon, *Croton Tiglium*, *Gelsemium*, *Veratrum nigrum*, *Podophyllum*, *Coptis*, *Cimicifuga*, *Polygonatum*, *Polygala*, *Cannabis*, *Ranunculus sceleratus*, *Poterium officinale*, *Acorus Calamus*, *Polygonum Bistorta*, *Dictamnus albus*, *Tussilago Farfara*, *Leonurus*, *Salvia plebeia*, *Solanum Dulcamara*, *Hyoscyamus niger*, *Prunella vulgaris*, *Artemisia*, *Arctium Lappa*, *Inula*, and iodine-containing seaweeds.

Five principal poisons were enumerated in the ancient herbal of Shen Nung—namely, *Croton Tiglium*, *Veratrum*, aconite, Lang Tu (not yet identified with accuracy), and cantharides. I may here mention that the sale of certain poisons is forbidden by Chinese law, but the druggists evade the law in an ingenious manner: they simply sell the forbidden drug under another name, *e.g.*, croton seeds are sold as "river seeds," and arsenic as "sincerity mineral." If, however, any fatal effects result from the sale of arsenic, buyer and seller are both decapitated.

The Chinese in their choice of drugs were guided somewhat by the doctrine of the *Signatures*, by which it was supposed that some external mark of the plant indicated its use in some particular disease or symptom. The curved pods of a certain *Gleditschia*, which resembles a boar's tooth, are given for this reason in toothache; while madder, owing to its red root, is supposed to have emmenagogue properties. But beyond such trivial notions, there was unquestionably a great deal of close observation and accurate experimentation, as is evident from the list of drugs that I have quoted above. The acuteness of primitive people, whose minds have not been muddled by indiscriminate book-reading, is remarkable in many directions. The Lolos in Yunnan have a name for almost every tree and herb in the forest; and so keen are their powers of observation they often can tell a tree not by its foliage, but by the appearance of the wood when cut into by the large knife which they carry about with them. They experiment with roots and leaves in cases of chronic illness. In acute illnesses I must admit that they are wildly theoretical. Such they ascribe to the demons and the ghosts of people who have died accidental deaths, who shoot the arrows of disease; and in such cases exorcisms and sacrifice are the remedies employed. The Lolos have a fair knowledge of vegetable dyes, and little in the forest escapes their notice. One of them pointed out to me the remarkable movements of the leaflets of *Desmodium gyrans*, a phenomenon really not very conspicuous, and he advanced the theory that the movements were caused by the vibrations produced by singing in the vicinity of the plant, and that talk had no effect. I understand that the cause of the movements is still a mystery to home botanists.

I will now show two slides. The first represents the primitive loom employed in Yunnan for making cotton cloth of a narrow width. About 15 feet long can be made by a day's labour on this loom. In this picture is shown a remarkable round hut, such as occurs in certain villages near Szemao. The second picture exhibits a part of the forest near the same place. It shows a very tall plant of *Lobelia pyramidalis*, and beside it my Chinese coolie.

To return to my proper subject matter, it will be impossible for me in the time at my disposal to do aught but glance briefly and in a desultory way at some of the more interesting drugs, such as are noteworthy from their history or economic importance, or from some peculiarities in appearance or use.

I will first speak about *Camphor*, which is not, as might be supposed, a product known to China in ancient times. The tree which produces ordinary camphor, *Cinnamomum camphora*, Nees, was indeed well-known to the ancient Chinese, but only as an excellent timber tree. The camphor which was first known in Europe and to the Chinese was that produced in Sumatra from the *Dryobalanops* tree, what is now known in Eastern commerce as *Camphor baroos*. It would appear that it was possibly through the Dutch or Chinese in their employment that the commencement of the camphor industry in Formosa and Japan originated, from the discovery that *Cinnamomum camphora* could yield a product analogous to that of the Sumatran tree. The strong odour of the leaves of the Chinese tree might have led them to this discovery. At present the manufacture of camphor on the Chinese mainland is very trifling, and the world's supply is now a monopoly of the Japanese. It has recently been shown that camphor occurs in large quantities in the young leaves of *Cinnamomum camphora*; and some method of extracting it from the leaves, which could be clipped off the trees, might prove more efficacious than the costly and destructive practice heretofore in use, by which the tree is cut down and chips of the wood distilled. We may then see, perhaps, camphor produced in quantity in districts like the Nilgiris and Ceylon.

A third kind of camphor is obtained by distillation with water from the leaves of *Blumea balsamifera*, D.C. in the island of Hainan. This is costly at present, but the plant is a common weed in many parts of India, Burma, and the Straits, and might prove a cheap source of camphor by-and-bye.

Opium is another drug which has been introduced into China from abroad. The Arabs carried it to China in the ninth century, and it was used for centuries only as a drug in diseases like dysentery. The annual import in 1765 did not exceed 200 chests. It is not known exactly when opium-smoking began; but in 1796 an edict was issued prohibiting the practice, owing to the rapidly increasing number of smokers. This edict was evaded, and by 1820 the import had arisen to 4,000 chests yearly. The Chinese Government then took great alarm at two features of the trade: one the economic, the enormous drain of silver from the country which its purchase entailed; the other moral, the debauching of the population. It is not my business here to go into the opium question, but I believe that the Chinese Government is sincere in its opposition to the trade, in spite of the fact that it has allowed within recent times the extensive growth of the poppy within its own territory. The native growth was expected to diminish the foreign importation, and so do away with the economic difficulty. The moral question remained the same, whether Chinese smoked Indian or home-grown opium.

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* Communicated to the Pharmaceutical Society, at a meeting held in London on Tuesday, April 15, 1902.

There have been many attempts to palliate the evils of opium smoking, but the following facts are worth the consideration of fair-minded people:—First; the Japanese Government has always steadfastly opposed opium. In Formosa, since that island has become their territory, the Japanese have restricted, and hope eventually to abolish, opium-smoking. Yet there was a large population of Chinese smokers, and the import of the drug yielded a large and easily-collected revenue. Second; the Roman Catholic Church in China, as elsewhere, is loath to oppose native practices unless they are radically vicious. In these islands, *e.g.*, it never preaches total abstinence from alcohol, nor has it in China interfered with foot-binding, an inhuman custom. Yet, by a local law of the church, all Roman Catholics in China are forbidden to engage in the cultivation, sale, or smoking of opium. Third; during all my twenty years in China I never heard any Chinese attempt to defend the practice, be he merchant or official, farmer or labourer. It is universally recognised as a great evil, the stress being severest upon the labouring classes, who spend on the drug a large portion of their earnings, and so bring ruin on themselves and their families, too little income being left for food or clothing. Amongst the richer classes the habit diminishes energy and lowers the moral tone.

The export of opium from India to China is dwindling, and it would be a wise policy for the Indian Government to diminish gradually its cultivation, confining it to the quantity necessary for medical purposes. By studying the methods of preparing medicinal opium that are in use in Asia Minor, the Indian Government might obtain eventually the legitimate trade of supplying the whole world with most of the opium required for use in medicine. This could be done hand in hand by agreement with the Chinese Government, which would, I believe, stop native growth if we withdrew our Indian opium. Every dollar now spent on opium in China would go really ultimately to benefit our trade in other articles.

The bark which I now exhibit is called *Tu chung*, and it is much esteemed by the Chinese as a remedy in cases of excessive perspiration. If the bark is broken across and the parts are drawn asunder, they show the silvery sheen of innumerable threads of elastic gum. The leaves, petioles, and fruit of the tree also exhibit the same feature. The tree which yields this strange bark was known to the Chinese in the earliest period of their history, but it was only recently that botanists became acquainted with it. It was discovered by myself in plantations in Hupeh, and has been described as a new genus, *Eucommia*, in the small Eastern order Trochodendraceæ. The gum is a sort of guttapercha, and the microscopical structure of its containing cells has proved of great interest. The tree grows in the cool mountain regions of Central China, and it may turn out of economic importance as a possible source of guttapercha, a source available in temperate countries.

Another curious Chinese product, not however a drug, is this wood, which is derived from a laurel, *Machilus Thumbergii*, S. et Z. Shavings of it steeped in water exude a clean gum, which is used by Chinese ladies as bandoline, and by its use they keep their hair smooth and glossy.

I will show the receptacles of *Ficus pumila*, L., specimens which were procured by me in Formosa. In that island an excellent jelly is made by steeping them in water; a little sugar is added, and a pleasant summer food is thus obtained. The receptacles are also met with in drug shops on the mainland. Steamed, they are used as an application in painful piles. This plant is remarkable for its dimorphic leaves. In the barren stage it creeps over the surface of rocks, covering them with a continuous layer of minute leaves. When it takes on the fruiting stage it pushes out, horizontally or obliquely from the surface of the rock, branches which bear very large leaves and fructifications. In the one stage the leaves are only half an inch or so in length; while in the other they are as much as three inches long. The differences between the two stages in habit and in the size of the leaves are very peculiar.

Everyone has heard of *Ginseng*, which is so valued by the Chinese as a tonic in cases of chronic illness; and, as is well known, there are two main varieties, one produced in Mandschuria, Japan and Corea, and the other in the United States and Canada. There are certain differences between the plants, which are, however, kept together in the 'Index Floræ Sinensis' as *Aralia quinquefolia*, Pl. et Dene. A great number of additional specimens of wild forms of plants closely resembling ginseng have been sent by me to Kew from both Hupeh and Yunnan. In Eastern Yunnan and Western Kwangsi, one form is cultivated; but the rhizomes are not recognised by the Chinese as a kind of ginseng. They are called *San-ch'i*, a drug to which is ascribed entirely different properties. *San-ch'i* is much valued as a sovereign remedy in all cases of external wounds and hurts, and is always carried about by military officers on active service. The plant yielding this drug was unknown till I obtained specimens lately in Yunnan, and it is very remarkable that the two most esteemed drugs in China, one in medical, the other in surgical cases, should turn out to be so closely allied. In addition to these forms in China, there are others met with in the Himalayas, which have been hitherto grouped together as *Aralia Pseudo-ginseng*, Benth. Mr. Burkhill has studied the whole group, but his paper has not yet been published. He distinguishes the form which yields the valuable *San-ch'i* as *Aralia quinquefolia*, var. *noto-ginseng*; but it will, I think, eventually be considered more convenient to look upon it as a distinct species.

The *San-ch'i* plant occurs wild in the forests of Yunnan over a wide area, but the drug is mainly produced by cultivated plants, which are grown by the strange aboriginal race called the Yao. The Yaos inhabit, in isolated villages, the high mountains of southern China and Tonkin. They always live on the verge of primeval forest, and in addition to being expert hunters, they generally cultivate *San-ch'i* and the species of *Strobilanthes*, which yields the indigo used in these parts. The *San-ch'i* is grown in forest clearings. The plants are protected from the glare of the sun by rude stagings, such as will be described by me in connection with the next drug. I found the Yaos pleasant and agreeable people, and I will now show a slide, which is a photograph of one of their villages perched on the verge of a mountain forest near Szemao. The next slide shows a lane in the village. Another slide represents a boat crossing the Nanban river, one of the tributaries of the Mekong.

Huang Lien is one of the most important drugs in use amongst the Chinese, and the plant producing it was discovered by me in Hupeh, where I paid a visit to a plantation. I remember very well the day on which I made the visit, as it was the most fatiguing excursion I ever went upon. The night before I had spent in a log-hut at 8,000 feet altitude, and the way down to the plantation, some 2,000 feet lower, lay along a torrent bed; the descent was perilous, as we had to lower ourselves, my coolies and myself, from rock to rock in a cautious manner. It rained all day incessantly, and on our return we took a false path, and had to descend again and retrace our steps, finally reaching the summit of the mountain by a second ascent. *Huang lien* is cultivated in forest clearings, exactly in the same way as *San-ch'i*. The plantation was a plot of ground, some 400 feet long by 400 feet wide, over which was erected a staging, made by stakes four feet apart and three feet high, over which were laid branches of trees. In this way the sun's rays only reached the plants in a glimmering way. The plants were raised from seeds, then the young plants of a year's growth were transplanted, and allowed to grow under the staging for eight or ten years, until the rhizomes had attained the necessary size.

Huang-lien, cultivated in Hupeh, has been described by Franchet as a new species of *Coptis*—namely, *Coptis chinensis*; but he admits that the foliage is absolutely identical with the Indian plant, *Coptis teeta*, Wall, which grows in the Mishmi Hills in Assam, and the roots of which make their way, packed in tiny baskets, to Calcutta. I have been at some pains to examine the specimens at Kew and the literature on the subject, and I find that considerable confusion has been occasioned by a figure of Griffith's, which is called *Coptis teeta*, but which is not a *Coptis* at all, as he himself admits. The figure given in Volume V., plate 114, of the Annals of the Royal Botanic Garden, Calcutta, of the plant which is considered by Brühl to be *Coptis teeta*, Wall, agrees absolutely with Ford's specimen of *Huang-lien* from Kwangsi. There is not sufficient material at Kew to decide whether or not Franchet's specimens are the same as this; but I doubt very much, in spite of the slight discrepancy in his description of the flowers, whether his new species, *Coptis chinensis*, can stand; and it is probable that all the Chinese specimens in the Kew Herbarium are *Coptis teeta*, Wall.

Huang-lien from China is imported into Bombay, so that in India both Assam and Chinese Coptis are employed.

In the Chinese drug-shops may be seen the rhizomes of *Picrorrhiza kurroa*, Royle, a Himalayan plant. These are called *Hu Huang-lien*—*i.e.*, Tartar *Huang-lien*—and they are imported into China *viâ* Tibet. Rockhill mentions this drug as a product of Lhasa.

Rhubarb is a very important Chinese export. Strange to say, its origin is not yet clear. The only dried specimens of a *Rheum* producing rhubarb for the foreign market in China itself which have reached Europe were obtained by me in the mountain forests of Hupeh at 7,000 to 10,000 feet altitude. These have been identified with *Rheum officinale*, Baillon. I observed this plant growing in the forests, in the soft decaying vegetable matter of ages; and it had horizontally-growing roots, some three or four feet long, about four inches in diameter at the larger end, with a broad cortex, but golden yellow on section. Traders came to this locality and bought the dug-up roots from the mountaineers. These were carefully pared and cut up into pieces, which were pierced with holes made by box-wood pins and then dried in the sun. There is no doubt that this species does supply a part of the rhubarb of commerce. Further west, on the frontier of Tibet, at Tachienlu, there is a large production of rhubarb for the foreign market; but two of my friends who were there failed to obtain specimens of the plant, although they collected botanical specimens. I asked them why, and they replied that they did not gather any specimens of the rhubarb plant because they thought that such a well-known plant would be of no interest.

The great seat of the rhubarb trade is at Hankow. A portion of the rhubarb met with in this great market comes down the Yangtze from Szechwan and Tibet, *viâ* Ichang. Another part apparently comes overland, or down the Han River from Kansu and Shensi. The great interior market of rhubarb is Si-ning, in Kansu, and an immense quantity of the drug is collected in the mountains around that city, and in the vicinity of Lake Kukonor. Rockhill says a very fine quality is dug up on the mountains south of Shang, near the same lake; but he did not observe rhubarb growing wild till he reached much further south in Tibet, in the country west of Batang. Pratt says a great deal is collected at Ta-chien-lu, where it is dug up, being simply sun-dried and pierced with holes, not scraped. It is sent on from there to Sining, where it receives a second treatment, being dried again after being thoroughly scraped.

Bretschneider ('Botanicum Sinicon,' II., p. 231) holds that Prezewalsky discovered in 1872 the plant yielding the drug in Kansu, which turned out to be *Rheum palmatum*, var. *tanguticum*. Another species from Szechwan and S.E. Tibet, from which a great part of the best Chinese rhubarb is derived, was obtained in 1867 by the French missionaries and sent to Paris, where it was cultivated, and described by Baillon as *Rheum officinale*.

Maximowicz, in a letter to Kew, says that *Rheum palmatum* occurs in W. Kansu (called Amdo), but that in E. Kansu a different species occurs, collected only in leaf by Potanin, which is probably *Rheum officinale*, Baillon, or *R. Pichonii*, Pierre. The last-named species is possibly the same as *R. officinale* (see 'Index Floræ Sinensis,' II., 354). Maximowicz believes that both kinds reach Sining, and that formerly both yielded Kiachta rhubarb. He further adds that *R. rhaponticum* of the dry steppes of Daurre is found to be equal to and as good to use as the Chinese rhubarb.

Rockhill points out that the medicinal properties of rhubarb are scarcely known to the Mongols, who use the root as a dye to colour yellow the hats, boots, and clothes of the Llamas.

According to Mr. Holmes, neither *R. palmatum* nor *R. officinale* yield a drug exhibiting the peculiar markings of the best Chinese rhubarb, and this would go to show that there is a third species still unknown.

Rheum officinale[*] occurs at Ta-chien-lu, from which district it was sent by the French missionaries in 1867; also, apparently, in Nan-ch'uan, to the S.E. of Chungking, and in Fang District in Hupeh.

Rheum palmatum[†] is recorded from W. Kansu. In these great regions there is room enough for a third species to occur, and I would point out that efforts ought to be directed towards obtaining specimens of the plant growing in E. Kansu and Shensi, because this is the most likely locality for the third species to occur. From there it would go to the great central market of Sining; and this is Shensi rhubarb.[‡]

Apparently no rhubarb is now exported from Canton or Tientsin; all comes down the Yangtze from Hankow.

In the same mountainous regions of Hupeh I came across the cultivation, if it may be so termed, of the fungus which is called *Mu-erh*, and is so much esteemed as an article of food by the Chinese. This is *Hirneola polytricha*; and Mr. Massee informs me that this species and *H. Auricula-judae* are only geographical forms of one cosmopolitan species. Trees are cut down and allowed to lie rotting on the ground for a year. They are then sawn into short lengths and erected into shed-like structures in the opener parts of the mountains. The spores floating in the air alight on the decaying bark and give rise to the *Mu-erh*. In some localities edible mushrooms appear on the sheds instead; so that one side of a mountain may be famous for its *Mu-erh* and the other side for its mushrooms.

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[*] *Rheum officinale* occurs between 30° to 32° N. lat., from 97° to 111 E. long.

[†] *Rheum palmatum* occurs between 36° and 38° N. lat., and between 99 and 103° E. long.

[‡] Shensi rhubarb is further east to 111°, between the same parallels as the Kansu rhubarb.

Some Chinaman discovered this fungus in New Zealand, and a large importation used to occur from there into Hongkong for the Chinese market; but I hear that the supply in New Zealand is becoming exhausted.

Lysimachia Foenumgraecum, Hance, is a curious herb, very common in the forests of Kwangsi and Yunnan. When growing, it has no smell whatever, but the leaves, when dried, emit a strong odour of fenugreek. They are used to scent hair-oil, and as much as 36 tons of the leaves, valued at £2,400, is annually exported from Canton to other parts of China. Hance says that the leaves are not only used to odorise hair-oil, but that they are also moulded into beads and used medicinally.

Dioscorea rhipogonoides, Oliver, occurs in Formosa, South China, and Tonkin. The tuberous root, called Dye Yam, is used in Canton and elsewhere as a dyeing and tanning material, for preserving fishing nets, for example, and dyeing certain cotton fabrics. The export from Tonkin to China is enormous, and this product is exceedingly cheap. Its properties are well worth investigating in this country.

I will now show a peculiar *Extract of Tea*, which is made in the office of the Prefect at Szemao, whence it is sent to Peking as tribute for consumption in the Imperial Palace. This extract is obtained by repeated decoctions, and analysis shows it to contain 6·1 per cent. of caffeine and 12·7 per cent. of tannin. The Shan States, east of Szemao, produce a tea of a rough flavour, which is generally made up into circular cakes. The Tibetans come to Szemao and buy considerable quantities of this tea, while the rest makes its way to all parts of China, where it is esteemed as having some vague medicinal quality.

In connection with the commerce and traffic of the interior of China I may now show some slides. This one represents the Custom House at Szemao, which I had charge of for nearly two years. The cargo, which is generally carried by pack horses and mules, seen in the picture, is cotton from Burma. The pack-saddle used is most ingenious, and is well-shown in this slide, which represents a pack horse, as employed by the French army in Tonkin. On the saddle rides a wooden frame, and to this frame are lashed boxes or other packages. The frame, with its packages, is easily taken off or put on the animal; and the weight is capable of the nicest adjustment, and never presses on the sides of the animal, as it does in other kinds of packs where the cargo is lashed to the saddle itself. The next slide shows pack oxen crossing a bridge near Szemao. Such bridges are made by the Shans over small streams. A much more elaborate bridge is shown in the next slide—the Iron Suspension Bridge, over the Black River, on the way between Szemao and the capital of the province, Yunnan-fu. This bridge is made of iron bars and links, stretched in chains from pier to pier. It was constructed by a Chinese blacksmith.

The principal Chinese soap trees are *Gymnocladus chinensis*, Baillon; various species of *Gleditschia; Sapindus Mukorossi*, Gaert.; and *Pancovia Delavayi*, Franchet. Their fruits contain saponin in quantity, and will provide a cheap source of this substance, if it is required in our manufactures. The seeds of *Camellia sasanqua*, Thunb., are crushed to yield the so-called Tea-oil, and the refuse-cake contains saponin, and is used by the Chinese for cleansing fabrics and as a hair-wash. At Hongkong, a diluted decoction of this cake is used for destroying earthworms in grass lawns.

Mr. Ford's researches have shown that cassia bark is derived from *Cinnamomum cassia*, Bl. We are still, however, ignorant of the botanical origin of two other cinnamon barks. One is the thick and extremely dear bark so much esteemed by the Chinese as a medicine. It makes its way into China from French Laos, being carried by pedlars across the Red River northwards into all parts of China. The other bark is the so-called *Saigon cassia*, which is a regular article in the New York market. It is imported thither from Hongkong, but it comes to Hongkong from Annam, and is not a product at all of Saigon or Cochin China. I have a report presented to the Hanoi Chamber of Commerce in 1897, and from this report it appears that this bark is cultivated in the wild mountains of Annam by the savages, who are called *Moi*. In 1896 the export from Annam was 241,000 kilos. The tree producing this bark is said to occur wild in the mountain forests of Annam, but the commercial product is all derived from the gardens of the savage Mois. The same report mentions the occurrence in other districts of Annam and Tonkin of a wild cinnamon tree, the bark of which is fifteen or twenty times dearer than the cultivated kind, and this goes in part northwards into China. This is evidently the valuable cinnamon which is carried by pedlars across the Red River.

True *Star Anise*, the product of *Illicium verum*, Hk. f., only occurs in Kwangsi and Tonkin. In Japan *Illicium Anisatum*, L., produces poisonous fruits which closely resemble the true fruits. An enormous quantity of this poisonous fruit is imported into China from Japan, and I have never been able to find out how it is used, unless it be as an adulterant of the true star anise, which is used as a condiment with meat in China.

The difficulty of clearing up obscure points like the one just mentioned, and also of finding out the origin of drugs and other products, is very great. I have been fortunate enough, however, to come across in my wanderings in China many of the plants which are used as drugs, etc., but I cannot now give a detailed list of these discoveries. Mr. Holmes has also elucidated many difficult questions. He has shown, *e.g.*, to mention only one, that Chinese cubebs are derived from *Litsea citrata*, Blume. A similar tree, *Litsea pungens*, Hemsley, yields in Hupeh fruits which are called "mountain pepper" by the Chinese. They are salted and eaten as a condiment. *Huang po*, a yellow bark used as a dye for silk fabrics, has been shown by Mr. Holmes and myself to be the product of *Phellodendron amurense*, Rupr.; and the Japanese, who were in error concerning this bark, have adopted this identification in their recent publications.

I will now say a few words concerning botanising, which has been the occupation of my leisure time in China for many years, and has resulted in vast collections of dried plants. It would be of interest to bring before you some of the wonders of the great forests of the interior of that great country; but I can now only allude to one or two points. I consider that we are very ignorant still of the upper surface of the forests, that exposed to the outer air, and we shall remain so till navigable balloons are invented, in which we might skim over the tops of the trees. It is useless to try and cut down trees, as they will not fall, and their ascent is often impossible. Huge lianas often extend from the ground to the summits of the tallest trees; and I have seen a rose with a stem over six inches in diameter, which extended like a great cable for 200 or 300 feet, and flowered high up above the trees. In Southern China hosts of orchids, ferns, and other plants live on trees. As all plants cannot reach the summit of the forest, we observe the curious phenomenon often that the flowers are borne on the old wood on the stems below the leaves, and in this way insects are able to approach the flowers from underneath, as it were. Flowers appearing before the leaves is another very common phenomenon. A good example of this is the *Bombax* tree, shown on the slide; in flower it rather resembles an artificial candelabra than a natural object. The next slide shows a *Ficus*, which is on the Mengtse plain; it illustrates well the enormous size which some trees attain. Another species of *Ficus* is now shown in this slide.

It quite differs in habit from the last, being as scanty in foliage as the other is luxuriant. The next slide shows the *Mahc*, a primitive people living near Szemao. They are perhaps the best-looking of the aborigines, yet they are rather low in the scale of civilisation. Earth-eating is one of their practices. The last slide shows the way in which charcoal is made in the forests near Szemao.

My remarks have been somewhat desultory and disconnected, but the subject scarce admitted of more logical treatment in the time at my disposal. Now, nearing the end, like the story-tellers, I may point a moral. We have seen how important have been certain exports to China, as ginseng from America and fungus from New Zealand. With some enterprise this list might be greatly extended. Many of our colonies and possessions yield products which would have a good sale in China. It might be possible, indeed, to cultivate certain drugs for the Chinese market. The pseudo-ginseng of the Himalayas might, *e.g.*, be saleable in China. For such work, of course, Chinese, acquainted with native methods of drying, cultivating, etc., would be necessary.

Another important question is the converse of the preceding, the utilisation by ourselves of the many important vegetable substances which occur in China. I have mentioned the fruits containing saponin. I might now draw attention to *wood-oil*, which is yielded by the seeds of *Aleurites cordata*, M. Arg. The native boats on the Yangtze are brushed over with this oil, which looks well as a varnish, and preserves the wood. There is a great variety of substances yielding tannin, as certain acorn-cups, the cones of *Platycarya strobilacea*, S. et Z., etc. In another place, lately, I alluded to the importance of attending to the intensive modes of cultivation which prevail in China. In a word, there is much to be gained from scientific exploration of China, and this should be carried out, in my opinion, by well-planned expeditions of men carefully trained in the different departments of science and art.

EXTRACT OF GENTIAN.[*]

BY HENRY G. GREENISH, F.I.C.
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Review of Pharmacopœial Processes.

The British Pharmacopœia gives the following method for the preparation of extract of gentian:—Infuse gentian root in ten times its weight of distilled water for two hours; boil for fifteen minutes; pour off; press; strain; evaporate the liquid to the consistence of a soft extract.

The process official in the German Pharmacopœia is briefly as follows:—Macerate one part of gentian root, in slices, with five parts of water for forty-eight hours at 15° to 20°; press, and concentrate. Macerate the marc with three parts of water for twelve hours; press, and add to the first liquid; evaporate the mixed liquids to three parts; when cold add one part of alcohol. Allow to stand for two days in a cool place, and filter; evaporate the filtrate to the consistence of a firm extract.

The Swiss method is similar to the German.

The United States Pharmacopœia orders the root in No. 20 powder to be exhausted by percolation with cold water. The percolate is then evaporated to a pilular consistence.

The Austrian Pharmacopœia directs the root to be extracted by maceration with cold water; the liquor thus obtained clarified by subsidence, then boiled, filtered and evaporated.

The French Codex gives a method which differs only slightly from the foregoing process.

On comparing the above processes it will be observed that the British Pharmacopœia alone orders the drug to be "boiled" with water, all the other authorities quoted above agreeing in the use of cold extraction. The majority of these order the maceration process, whilst in the United States percolation is official. It may be interesting to note that the three British Pharmacopœias preceding the present edition ordered the "sliced root" to be infused in "boiling distilled water."

We hoped, by a series of experiments in the preparation of extract of gentian to answer the following queries:—(1) Does the official method of treatment exhaust the root sufficiently for practical purposes? (2) Is the boiling to which the root is subjected advantageous or prejudicial? (3) Is extraction with cold water to be preferred to that with hot water? If so, how is the extraction best conducted? (4) Is a menstruum similar to that used for the tincture—viz., 45 per cent. alcohol, or even a stronger alcohol—to be preferred to water?

The following is a *résumé* of the more useful experiments that helped us to answer these questions:—

Preparation of Extractum Gentianæ by the Official Method.—Several samples of extract were prepared from a good, sliced gentian root (Sample A), following the official process in all its details. The process worked well, and yielded about 38 per cent. of firm extract, which was clear and bright, but tough and elastic to the touch, as though containing a gelatinous substance. The marc that was obtained was again boiled with sufficient water to cover it for fifteen minutes, and the strained residue being again pressed and the mixed liquids filtered. Evaporated on a water bath, they yielded a further 12·5 per cent. of firm extract, which was strongly bitter in taste. The decoction was very gelatinous and slimy, even before it had been much evaporated.

This experiment, therefore, tends to show that the official method does not practically exhaust the root either of its bitter principle or of the other constituents that are soluble in boiling water.

Preparation of Extractum Gentianæ by the Cold Method.—We next proceeded to prepare some extract according to the method adopted by the German Pharmacopœia in order to compare the extraction by cold water with that of boiling water. Sample A was used, and the mode of procedure was as follows:—200 grammes of the sliced root were macerated for forty-eight hours with 1,000 C.c. of distilled water; the infusion was pressed off and concentrated to about 400 C.c. The marc was again macerated with 600 C.c. of distilled water for twenty-four hours, the infusion pressed off and concentrated as before to about 200 C.c. The liquids were then mixed, and when cool, 200 C.c. of 90 per cent. alcohol were added. The mixture was allowed to stand for forty-eight hours, during which time a separation of flocculent matter, which will be spoken of subsequently as "pectinaceous," formed. This was removed by filtration through calico; it weighed only about two grammes. The liquid filtered slowly, but the filtrate was clear and bright. The latter was evaporated to a firm extract, as directed by the German Pharmacopœia, which weighed 74 grammes, equivalent to 37 per cent. The yield is slightly less than that obtained by the official process, especially if one bears in mind the difference in the consistence of the extract. On the other hand, the exhaustion of the root, as far as could be determined by the taste, is more complete. The extract was bright, dark-brown in colour, and free from the gelatinous appearance of the official extract. This process, therefore, appears to be superior to that official in the British Pharmacopœia, inasmuch as it extracts the bitter principle more thoroughly, removes less pectin and other inert bodies, and yields a better extract.

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[*] Communicated to the Pharmaceutical Society of Great Britain, at a meeting held in London on Tuesday, March 11, 1902, and concluded from page 277.

This separation of "pectinaceous matter," previously referred to, occurs in every case when an infusion of gentian root is evaporated. It has been mentioned previously by various writers, Mohr (*loc. cit.*) speaking of an insoluble body which separated out on evaporation, the nature of which he was unable to determine. Squibb (*loc. cit.*) refers to this substance as "albuminous matter," a term which seems to have been used rather loosely to express any substance which is apparently coagulated on boiling a vegetable infusion. We are not in a position to state definitely what this substance is, but it does not seem unreasonable to suppose that it is either a form of cellulose itself or parapectin, both being insoluble decomposition products of the pecto-celluloses, either or both of which might be produced by hydrolysis on prolonged heating of an infusion containing pectin. It is noteworthy that after the addition of alcohol to the concentrated infusion, as in the method official in the German Pharmacopœia, there is no further separation of insoluble matter on continuing the evaporation, hence a clear, bright extract is obtained.

In order to ascertain whether successive maceration with smaller quantities of water would not exhaust the drug and yield a smaller volume of filtrate to be evaporated the following experiment was tried:—

Eight ounces of sliced root (Sample A) were infused with 16 ounces of distilled water for five hours. By straining and pressing 9½ fluid ounces of turbid liquid were obtained, which filtered very slowly, leaving a considerable deposit of slimy matter on the filter. This substance was soluble in caustic potash solution, but was reprecipitated on acidifying; it appeared to be of a pectinaceous nature.

The pressed root was again treated with 9½ fluid ounces of water, but this quantity appeared quite insufficient, the root having swollen considerably; after twelve hours the quantity of water was increased to 26 fluid ounces, and the maceration continued for forty-eight hours. Pressing and straining yielded 15½ fluid ounces of liquid.

The marc was treated by three more successive macerations with 20 ounces of water for two hours each, but the final infusion was still bitter.

The first infusion yielded 13·5 per cent. of dry extract (calculated upon the root taken), the second 11 per cent., the remaining three infusions taken together about 10 per cent., making about 34·5 per cent. of dry extract.

These experiments show that the exhaustion of the root with cold water proceeds slowly, and that for practical purposes the root must be macerated with considerably more than twice its weight of water.

Extraction of Marc with Boiling Water.—In order to ascertain the quantity and nature of the substances extracted by boiling water from the marc that had been practically exhausted by successive macerations with cold water, the exhausted root was boiled for fifteen minutes with three pints of distilled water, strained and pressed. The decoction was then repeated with a further two pints of distilled water, the liquids mixed, strained, and evaporated. A yield of 9·4 per cent. of a hard extract was obtained, having a somewhat bitter taste and a gelatinous appearance; it was not at all hygroscopic, keeping unaltered even after several weeks' exposure in the laboratory.

The Relative Values of Using the Whole and the Sliced Root.—In 1836, Geissler (*loc. cit.*) recommended the use of the whole root in preference to the sliced, as he found the infusion filtered much more easily, and yielded a bright filtrate.

Eight ounces of gentian root, from a good sample of whole root (Sample B), was cut into pieces three or four inches in length, and macerated in a closed vessel for forty-eight hours with two pints of distilled water, strained and pressed; the liquor filtered rapidly, through calico, and gave a bright filtrate, which was then concentrated by evaporation on a water bath. The marc was macerated with 24 ounces of water, and the straining, etc., repeated. The two concentrated liquors were evaporated to the consistence of a soft extract; yield about 44 per cent.

This experiment was repeated, the mixed concentrated liquors being evaporated to about one-third of the original volume; they were filtered whilst hot, but on cooling a separation of pectinaceous matter took place, which necessitated a second filtration; the concentrated infusions are, therefore, best filtered when cold.

The marc from the second maceration was subjected to the same treatment a third time, but yielded only an additional 5·4 per cent. of extract. A third maceration is, therefore, from a practical point of view, scarcely necessary.

The same experiment was then conducted upon the same sample of root, which, however, was cut small previous to treatment. The yield of extract was practically the same, but the difficulty in filtering the liquids leads us to prefer the whole root. The first infusion from the whole root does not contain so much extractive as that obtained from the sliced root. The second infusions, however, show just the reverse, the final yield of extract being almost identical in each case.

Preparation of Extract by Percolation.—The United States Pharmacopœia contains a process in which gentian root in No. 20 powder is used and exhausted by percolation with water. We have reduced the root to No. 20 powder, but it was not in our opinion well adapted for percolation with an aqueous menstruum owing to the considerable swelling that takes place. Even if a considerable time be allowed for this to take place, and the drug packed very lightly, percolation proceeds slowly.

These experiments lead us to prefer exhausting the whole root with cold water by two successive macerations, the first with five times its weight of water for forty-eight hours, the second with three times its weight for twenty-four hours.

Preparation of the Extract with Alcoholic Menstrua.—Before preparing extracts with alcohol of various strengths we decided to ascertain by preliminary experiments with small quantities what proportion of the drug was dissolved by treatment with successive solvents.

We dried a quantity of good root (Sample B) at 45-50° C., and reduced it to a No. 20 powder.

A portion (10 grammes) of this further reduced to as fine a powder as possible yielded, when extracted with petroleum spirit in a Soxhlet extractor, 2 per cent. to that solvent. The residue obtained by evaporating the petroleum spirit solution was partly soluble in hot alcohol, from which it was deposited on cooling as a yellowish substance, having a waxy appearance. It was not further examined.

The exhausted root was dried at a low temperature and macerated for six days with 100 C.c. absolute alcohol. The alcoholic solution was filtered off, the residue washed, and an aliquot portion of the mixed alcoholic solutions evaporated to dryness. The residue amounted to 10·5 per cent. and formed a hard, pale brown substance with a bitter, but not intensely bitter, taste. The alcoholic solution was yellow in colour, and bright, remaining so after the addition of an equal volume of water.

The marc was again dried and treated similarly with 50 per cent. alcohol. The yield was 44 per cent. of clear brown extract, which on standing exhibited hygroscopic characters.

The marc was again dried and treated with water. The solution was pale yellow, and only slightly bitter. The extract amounted to 4 per cent., and was tough and gelatinous. The moist exhausted marc also gelatinised.

Gentian Root, in fine powder, yields: to

(1) Petroleum spirit, 2 per cent.
(2) Absolute alcohol, after (1), 10·5 per cent.
(3) Alcohol 50 per cent., after (2), 44 per cent.
(4) Distilled water, after (3), 4 per cent.

Two separate experiments, one with 90 per cent. and the other with 45 per cent. alcohol, showed that these solvents extracted 45·9 and 55·5 per cent. respectively from the same sample of root (Sample B).

These experiments show that 45 per cent. alcohol extracts a larger proportion of constituents than either 90 per cent. or absolute alcohol.

An experiment was next made with a larger quantity of root in No. 20 powder, exhausting it by percolation with 45 per cent. alcohol. The percolate was cloudy when collected, and became more so upon standing. The aqueous liquid left after the recovery of the alcohol by distillation was very muddy; it was filtered bright with the aid of kaolin.

An aliquot portion of the filtrate evaporated to dryness yielded 40 per cent. of hard extract. This extract was bright, clear, and intensely bitter; but again had the disadvantage of being inconveniently hygroscopic, becoming almost liquid when freely exposed to the atmosphere of the laboratory.

The dried marc was macerated with water for forty-eight hours, but yielded an almost colourless infusion, which was only slightly bitter in taste.

The kaolin, together with the suspended matter from the evaporated percolate, was dried and extracted with petroleum spirit; it yielded a small residue of fatty nature, to which no doubt was due the opalescence of the percolate upon standing.

These experiments show that 45 per cent. alcohol rapidly and effectively exhausts the root of its bitter principle, but the extract is not in our opinion suitable for pharmaceutical use on account of its inconveniently hygroscopic properties.

Experiments on the Extract.—It was thought that it might be useful to have some approximate idea of the nature of the bulk of the extract, accordingly the following experiments were set on:—

25 Gm. of extract, prepared by cold infusion, were dissolved in boiling distilled water, and the solution made up to 250 C.c.; 40 C.c. of solution of lead subacetate were then added to the hot solution, and the mixture well shaken and left over night. It was noticed that the mixture developed an odour resembling that of solution of hamamelis. The precipitate was filtered off at the pump and well washed with cold distilled water, the washings being added to the filtrate. The excess of lead was removed by sulphuretted hydrogen; the precipitated lead sulphide was filtered off and well washed, the washings being added to the filtrate. A current of air was aspirated through the filtrate until free from hydrogen sulphide. The volume of the solution was made up to 350 C.c. The solution was bright yellow in colour; taste unpleasantly bitter; having a peculiar odour, which disappeared after exposure to the air for a short time.

A little of the liquid boiled with Fehling's solution caused immediate reduction.

50 C.c. of the liquid evaporated to dryness gave a residue weighing 2·852 Gm., equivalent to approximately 20 Gm. in the 350 C.c.—*i.e.*, only about 20 per cent. of the extract is precipitated by solution of lead subacetate.

Determination of Amount of Sugar in Ext. Gent.—Pavy's method was used.

The Pavy's solution was standardised in the usual manner. 100 C.c. were found to be equivalent to 0·0526 Gm. glucose.

In making these determinations the liquid, after precipitation with solution of lead subacetate, was used.

Exp. I. A preliminary experiment showed that the liquid was too strong. Therefore, 25 C.c. were diluted to 100 C.c. with distilled water, and then titrated against the Pavy's solution.

In two titrations 100 C.c. Pavy's solution required 8·8 and 8·9 C.c. of the diluted liquid, equivalent to approximately 8·4 Gm. of reducing sugar, calculated as glucose, in 25 Gm. of the extract.

Exp. II. 25 C.c. of the liquid were heated with three drops of hydrochloric acid (B.P.) in order to hydrolyse any sugars, or any other bodies capable of undergoing hydrolysis, which might be present, including the glucoside gentiopicrin, gentiobiose, a product of the partial hydrolysis of gentianose, and sucrose.

The acid liquid was then neutralised and made up to 100 C.c. as before.

In two titrations 100 C.c. Pavy's solution required 6·5 and 6·4 C.c. of the diluted liquid, approximately equivalent to 11·3 Gm. of glucose, showing an additional 2·9 Gm. of glucose formed on hydrolysis.

These experiments show that an extract prepared by us from a good sample of whole root consisted of, roughly speaking, about one-third its weight of glucose, or other reducing substances; about one-fifth its weight of pectin, and other bodies precipitable by solution of subacetate of lead.

Determination of Ash in Extract.—10 C.c. of liquid evaporated to dryness in a platinum capsule, and then ignited at a bright red heat, yielded an ash weighing 0·0110 Gm., equivalent to 1·44 per cent. of ash in the extract.

Summary of Conclusions.

As a result of our experiments we conclude:—(1) That the official method of treatment does not sufficiently exhaust the gentian root of its bitter principle. (2) That the boiling to which the root is subjected is disadvantageous in that a larger amount of pectin is dissolved than when cold extraction is used. (3) That extraction with cold water is preferable, two successive infusions being necessary. The method official in the German Pharmacopœia possesses certain advantages over that of the British Pharmacopœia, inasmuch as the drug is exhausted by cold infusion; by this process the bitter principle is more efficiently extracted, whilst less pectin is dissolved, and a better extract is obtained. At the same time, the relatively small advantage gained by the addition of alcohol to the concentrated infusions does not appear to justify the adoption of this part of the German Pharmacopœia process. (4) That although 45 per cent. alcohol thoroughly exhausts the bitter principle, the extract obtained on evaporation of the tincture has the disadvantage of being hygroscopic. (5) That the exhaustion of the root with cold water proceeds slowly. (6) That the infusions obtained from the whole root by the cold extraction process filter more readily than when the sliced root is used. (7) That gentian root is not, in our opinion, well adapted for percolation with water.

We beg to submit the subjoined new monograph for your consideration with a view to its inclusion in the next edition of the British Pharmacopœia:—

Extractum Gentianæ.

Infuse gentian root in five times its weight of distilled water for forty-eight hours; pour off the infusion; press the marc; strain the expressed liquid; mix the liquids, and concentrate them to one-third their volume; filter when cold. Infuse the marc for twenty-four hours with a further quantity of distilled water equivalent to three times the weight of gentian root taken; repeat the process of decantation, expression, concentation, etc. Mix the two concentrated liquids and evaporate to the consistence of a firm extract.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

Evening Meeting in London.

The last evening meeting of the session was held in the Society's House, 17, Bloomsbury Square, London, on Tuesday, April 15, the **President**, Mr. G. T. W. Newsholme, in the chair. There was a fairly good attendance.

The **President** said that, as announced in the previous week's *Pharmaceutical Journal*, Mr. P. W. Squire had been good enough to offer to submit some specimens of citrine ointment for examination. As his communication was a short one, he would call upon him first.

Mr. P. W. **Squire** then read a paper on

Citrine Ointment.

which is printed on page 314.

The **President** said it was very good of Mr. Squire to bring the specimens of ointment to that meeting. He had mentioned that he had been about to throw these specimens away, when it occurred to him that they were of sufficient interest to bring before an evening meeting. That showed the importance of looking at things before throwing them away, because, as Mr. Squire had demonstrated, they might be important enough to bring before an evening meeting of the Pharmaceutical Society. It was rather to be regretted that there would not be sufficient time that evening to enter into discussion upon this ointment, but, as Mr. Squire's remarks would be published in the Journal, it was to be hoped a discussion might take place in its columns. He was sure all present were very much obliged to Mr. Squire for bringing the matter forward.

The **President**, in introducing Dr. Augustine Henry to the meeting, said that readers of the *Pharmaceutical Journal* had long been familiar with the name of Dr. Henry, but he believed this was the first occasion upon which he had read a paper at an evening meeting of the Society. For many years, however, as a corresponding member, he had rendered great service to the Society. Dr. Henry was probably well known to most members of the Society as having held a prominent position in China, where he had taken a great interest in the materia medica of the country, and he had recently been the recipient of the medal of the Royal Horticultural Society. It was scarcely necessary to add that Dr. Henry was the greatest living authority on Chinese materia medica and botany.

Dr. **Henry** then read his paper on

Chinese Drugs and Medicinal Plants.

which is printed at page 315. The paper was illustrated with numerous lantern slides showing the various types of Chinese natives, their customs, and specimens of the botany of the country. At the conclusion of the paper,

The **President** said he thought they were all agreed that the paper had been an exceedingly interesting one. They had always understood that Dr. Henry was a distinguished botanist, and he had that night convinced them on the point. From Dr. Henry's remarks it was easy to understand what an interesting country China is from a botanical point of view. Until Dr. Henry went there only a small portion of China was known to botanists, and he had gone more deeply into Chinese botany and materia medica than any other living man; but he had shown that night that it was well worth investigation. He (the President) would like to say that Dr. Henry had been a great contributor to the Museum of the Society, and he had been in correspondence with Mr. Holmes, the Curator, for many years regarding obscure points in regard to certain plants and drugs. He thought the special thanks of the Society were due to Dr. Henry for the work he had done.

Mr. E. M. **Holmes** said it had been a great treat to him to listen to Dr. Henry, for although he had known him for about ten years, he had never yet met him without learning something fresh, and if time had permitted there was no doubt that Dr. Henry could have shown that the information contained in his paper was only a small fraction of what he knows about Chinese drugs. He (Mr. Holmes) thought it was only right to say that the Museum of the Pharmaceutical Society has been closely associated with the progress in European knowledge of the materia medica of the Chinese. The late Daniel Hanbury was the first Englishman to throw any light upon the botanical source of Chinese vegetable drugs, and the sixty pages into which his notes were condensed in the "Science Papers" forms the first really accurate description of them, since the Chinese characters are given for each. The collection illustrating these notes was after his death presented to the Museum by his brother, now Sir Thos. Hanbury, K.C.V.O. In 1871 a work entitled 'Contributions Towards the Materia Medica of China' was published by Dr. F. Porter Smith at Shanghai, but it was done under considerable difficulties, the author having no access to a good herbarium or specimens for comparison, and hence he appeared to have taken too much for granted. Unfortunately, this remarkably inaccurate work had been taken as a standard work. The typical specimens forming Dr. Smith's private collection were also in the Museum of the Society. At the close of the Colonial and Indian Exhibition the collection of Chinese drugs exhibited by Dr. Hokai, of Hongkong, which was as representative as it could be made, as well as a collection from Singapore of the Chinese drugs used by the Chinese residents there, was presented to the Museum. About ten years ago, when Dr. Henry was previously in England, he went through the whole of those collections, and furnished a series of notes upon them which, when some of the many unsolved points have been settled, should be of considerable value to the Chinese Customs, and render the Museum collections of Chinese materia medica the most useful for reference in Europe, if not in the world. Dr. Henry having probably a better knowledge of Chinese plants and drugs than anyone living, his determinations and botanical notes on those drugs had a special value. In the list of Chinese medicines published by the Inspector-General of Customs in 1889 at Shanghai (III. Miscellaneous Series, No. 17), in which the botanical and Chinese names of the drugs were, he believed, revised by Dr. Henry, there were no less than 1,575 varieties of Chinese drugs enumerated, but only about 224 of those were, he states, largely used. In the Museum collection over 200 distinct Chinese drugs have been recognised by Dr. Henry, some of them existing in several varieties, and possibly consisting of different but allied plants passing under the same name in different provinces. Information was still wanted concerning about 300 of the Chinese drugs, and more could hardly be known until the botany of China has been more extensively worked out than at present. Concerning the specimens exhibited, Mr. Holmes remarked that the gelsemium used by the Chinese was not the same species as that used in Europe and North America, but *Gelsemium elegans*, which was also used in China for criminal poisoning; that Corean ginseng was the most highly valued variety, fine pieces being worth their weight in gold. *Coptis Teeta* was remarkable for containing, he believed, the largest percentage of berberine of any known drug. With respect to rhubarb, Dr. Henry's statements were exceedingly important, since they proved that *Rheum officinale* actually produced a portion of the Chinese rhubarb of commerce. That it did not, however, yield the rhubarb formerly known, and figured by both Goebel and Collin as Canton rhubarb, and formerly known in this country as Russian, Turkey, or East Indian rhubarb, characterised by a distinctly reticulated surface, was evident from the fact that the *R. officinale* showed black veins, whereas the old Russian rhubarb had reddish veins. He had placed fresh specimens from his garden of the rootstock of *Rheum officinale* and *R. palmatum*, var. *tanguticum* (the latter being Prejevalsky's plant), from which it would be seen that *Rheum officinale* possessed a somewhat reticulated surface, with dark veins, but that the other had no resemblance to the Russian rhubarb in markings. He had seen Dr. Henry's plant at Kew, and the rhubarb root derived from it, but as Dr. Henry said the flowering stem was red, he thought it was rather probably either an allied species or a distinct form of *R. officinale*. It was much to be regretted that Mr. Pratt did not collect the rhubarb plant that he saw in Sechuen, and he hoped that the rhubarb at present named *R. Pichonii* might prove, when better specimens were obtained, to be the long-sought source of the old Russian rhubarb. It seemed probable that the plant would prove to belong to the group with palmatifid, and not the one with entire, leaves. The *Hirneola auricula judæ*, or Jew-ear fungus, was not uncommon on decaying elder trunks in this country, and he thought it probable that it could be produced in commercial quantities, if desired, by cutting down elder trunks and keeping them in damp, shady places. The mushrooms spoken of by Dr. Henry as growing on the trunks of trees in China must not be supposed to be identical with the mushroom of this country (*Pholiota campestris*), which never grows on trees, but to be an edible agaric, several species of which are cultivated both by the Chinese and Japanese on tree trunks. The "Saigon" cassia was recognised as the finest flavoured commercial variety, and for some time after it was made official in the United States Pharmacopœia an enterprising firm in that country held a monopoly of the article, which is rarely seen in this country. The quills were usually much more coated with the outer bark than in the ordinary Chinese cassia, and had a sweeter taste and stronger flavour. The information Dr. Henry gave as to its geographical source and trade route were extremely interesting, as well as that concerning the very expensive thick cassia bark (the specimen in the Hanbury collection being valued at 10 dollars per lb., and some sent by Mr. H. Humphreys from Hongkong at 5 dollars per oz.). The information given by Dr. Henry concerning the probable admixture of Japanese and Chinese star aniseed threw new light on the occurrence of this admixture being imported into this country. Hitherto it had been supposed to have been intentionally, not ignorantly, done. He could quite confirm Dr. Henry's statement concerning the impossibility of obtaining botanical specimens of trees in dense forests, where the dense growth and the immense lianas prevented the trees falling, even if cut down. In former years he had asked correspondents in British Guiana to send botanical specimens of the trees yielding copaiba and the various medicinal barks used in that country, and he had received exactly the same explanation of the impossibility of procuring them. It might interest Dr. Henry to know that a year or two ago the fruits of *Sapindus mukorossi* were imported into this country, and found a use, he believed, for cleaning silks and delicate fabrics that might be injuriously affected by the use of ordinary soap. The Tung oil had also, he understood, been recently imported in some quantity for some purpose, for which it was considered to be superior to linseed oil. With respect to the mucilaginous wood used as bandoline by the Chinese, Professor Greenish, who regretted his inability to be present, asked him to state that he had examined the microscopical structure of the wood, and found that "it contained numerous axially elongated cells filled with a transparent mucilaginous substance, the nature of which requires further investigation."

Mr. BARKER SMITH asked if Dr. Henry had been much impressed with Chinese therapy. Dr. Henry had referred to calomel as having been in use for something like one thousand years, which, he thought, showed a certain amount of intelligent application; therefore, it would be interesting to know whether Dr. Henry had been impressed with the intelligent use of drugs, for, say, removing growths, or in any great cures.

Mr. HILLS asked if botany was taught in any shape or form in China.

Mr. R. A. ROBINSON, junr., thought it would be interesting to know whether the Chinese blistering beetles, which he believed were considered to contain more cantharidin than the Spanish flies, were made much use of by the natives; also whether there was any recognised industry in Chinese blistering beetles. As a young member of the Society he hoped he might be allowed to say that he had never enjoyed an evening meeting better than on the present occasion.

Dr. HENRY, in reply, said that in regard to the therapy of the Chinese it was very difficult to get to know anything about the subject, because in the first place the Chinese doctors would not admit Europeans into their confidence, and it was very difficult to get into the houses where good Chinese doctors were attending patients. Then, too, there were no schools of medicine and very few books from which information on the subject could be derived; therefore it was exceedingly difficult to really know what was being done by the Chinese in the matter of medicine. He might say that the Chinese do not seem to be impressed by European medical men. They acknowledge that European doctors shine in surgery, but in regard to medicine they are very shy in believing that the Europeans are better than the native article. Even in Japan there were many doctors practising on the old plan, and in regard to the use of such drugs as calomel and arsenic it must be admitted they showed a good deal of empirical skill. One of the most famous Chinese doctors of the fourth century was stated to have cured a case of blindness by the operation of trepanning—probably a case of tumour on the brain. With respect to the teaching of botany in China, there was practically none. He knew of one case, however, in which a well-known Chinese Viceroy was very much interested in botany and was desirous of it being taught to his fellow countrymen. With that object he procured the services of a European microscopist who was distinguished for cutting sections. On his arrival at Canton the Viceroy asked him if he knew anything about cotton, and he replied that he had never seen a cotton-tree, his only interest in botany being in connection with its microscopical side. However, the Viceroy determined to make use of him, and he spent three years in the Naval School teaching botany to the naval cadets. He had a splendid set of microscopes, and on his return to Europe he (Dr. Henry) tried to get one of them, but he found they had gone back to the Naval Stores, and were in the Chinese Arsenal at Canton. In regard to Chinese books on botany, from time to time different individuals had been interested in botany and had published books containing pictures of plants—not perhaps botanically accurate, but more or less accurate. In that connection he might mention that the pictures of the ordinary Chinese primula were very similar to the species as cultivated in England. Of course there were ancient dictionaries which gave particulars of plants of 2,000 years ago, so that it was known now what plants were in China in ancient times. For instance, they were able to trace that cotton was not there before 1000, while particulars of tobacco and the potato were not published in a book till about forty years ago, and it was perfectly certain that maize was an American product, because it was not mentioned in Chinese works before the discovery of America. With respect to blistering beetles, they were an article of regular trade, but he was never in the district where they were caught. As a matter of fact, he really only had time to attend to matters connected with plants, and did not give much attention to the materia medica of the animal or mineral kingdom.

The **President** moved that a very hearty vote of thanks be accorded to Dr. Henry for his interesting paper, also for the great work he had done for the Pharmaceutical Society.

Mr. **Hills** said he had much pleasure in supporting what had been said regarding Dr. Henry's work. He was sure the members of the Society highly appreciated the information Dr. Henry had given, and the many valuable specimens he had presented to the Museum.

The thanks of the meeting were then accorded to Dr. **Henry**, and in reply he stated that it had been a great pleasure for him to read his paper before the Society. He would like to add that it had always been a very great pleasure to him to be associated with Mr. Holmes, who had been most kind and helpful to him in many ways.

The meeting then adjourned to the Examination Hall for refreshments.

LETTERS TO THE EDITOR.

Materia Medica or Pharmacopedy.

Under the above title, the *P.J.* of March 29, contains an interesting article describing the meaning and use of the words "Pharmacopedy," "Pharmacopedics," and "Pharmacopedic." The term "materia medica" is one of those self-explanatory phrases that has evidently possessed sufficient vitality to outlive many coined substitutes. Mr. Humphrey does not explain in what the term is unsatisfactory. It is extremely comprehensive, a euphonious phrase, made up certainly of two words, but containing only one more letter than the very harsh term as accented—"pharmacopedy." Above all, its meaning is clear and precise. The word "pharmacopedy" is open to several objections. The Greek, *φαρμακον*, is associated particularly with compounded drugs. Preparations of drugs are better treated of under "pharmacy," "materia medica" referring to simple drugs. The word would be more correctly spelt "pharmacopædy," and in any case the penultimate syllable should be accented and the vowel (or diphthong) long. The Greek roots given by Mr. Humphrey are not very informative to the uninitiated, who might assume that 'Pharmacopedia' was a book on drugs for boys, or that "the heavy crop of pharmacopedic research" was due to the activity of druggists' sons. The Greek word *παιδεια* gives a little more instruction. Whilst the word "pharmacopædy" — or better "pharmacopædia"—is an excellent description of a book which conveys instruction about drugs and their preparations, it—or its derivatives—is altogether unsuitable as a synonym for "materia medica," even if one were wanted.

London, April 9, 1902. F. W. Gamble.

Poisoning by Lead in Pills.

Some few weeks ago a young girl of the working class came to my shop for a pennyworth of "diachylum in the lump" (emp. plumbi), at the same time asking how she could best make it into pills! This startling enquiry naturally made me suspicious, and I questioned her. Her replies were evasive and confused, but I gleaned enough to convince me of her purpose. Since then I have had several suspicious-looking applications for the same article, and it would be instructive to know if other chemists have had similar experience. If so, it should go far towards clearing up the mystery as to source of supply in the Porthill case.

Coventry, April 15, 1902. W. Murray.

Chemists and the Society.

I trust that all the members of the Pharmaceutical Society will back up Mr. Waddington and the Bradford Association in vigorously opposing any attempt which may be made to curtail the efficiency of the *Pharmaceutical Journal.* Its interest and general usefulness to all sections of our calling have greatly increased with its enlargement since 1895, and I am convinced that any retrogression in this respect would be highly detrimental to the best interests of the Society. Let us rather have as much progress as possible. Apart from the Journal, what do country members obtain in return for their subscriptions, excepting perhaps the very occasional loan of a book from the Library? I also hope that an attempt will be made by the Council to settle definitely, once and for all, the right of a limited liability company to assume the title "chemist." The longer a definite decision is delayed, the greater their "vested interest" in such title becomes, through lack of opposition to such claim being put forward on behalf of those who alone have any moral—and I believe also legal—right to assume the title.

Frank R. Dudderidge.

Newcastle-on-Tyne, April 14, 1902.

Pharmacy is still militant. Pharmacy proper suffers a deal of oppression and suppression from men who ostensibly belong to its ranks. The mercantile element is too prevalent amongst them—as in the days of Bell and onwards—always piling up obstructions that task all the wisdom and adroitness of the loyal to overcome. What do they want now? Judging from the proceedings at Bradford, reported in this week's Journal, page 308, they want more for their money and their money returned in the same sack. Surely waste paper is cheap enough; they may get it for nothing, carriage paid, by taking advantage of a so-called "anti-cutting" publication (advertisement columns). Do they forget that our Journal is one of Bell's permanent bequests to British pharmacy that they go comparing its essential nature and objects with those of mere ephemeral trade journals? If they wish to improve the Journal or the Society, why not bring the study of the Pharmacopœia itself into their daily life and business, leave intricate pharmaceutical politics in the hands of their chosen representatives on the Council, allow these and allow the Editor a freer hand in the management, whilst they send up their papers on practical subjects? Let them deserve a better Journal, and be sure they would get it, though not of necessity a bigger one. I think, Sir, the seductive influence of "side lines" is responsible for much of the muddle-headedness that blocks the way of pharmaceutical prosperity. A typical pharmacist must be surrounded by an atmosphere of serenity and leisure. He who pants for profitable side lines is as a fish out of water. Some years ago we laughed them out of the "ancillary trades," showing, as was easy enough, that a pharmacy-man wanted no maidservants of any kind. Quite as nonsensical is the craving for "side lines." Pharmacy never yet deserted her patient, faithful adherent, and never will, in spite of times and circumstances. But where the sordid mind comes in, where greed and love of ease and a dislike for honourable labour infest the soul, covetousness drives the individual too often off the main line on to various side lines, with the result that he finds himself in Doubting Castle, or some such hobble, from which there is no escape. For the older hands who talk such rubbish as that the Journal is the only tangible return for their money I have not the least sympathy; they ought to know better. To the younger ones I would say, "We agree to differ; but by all means send up your ten guineas all at once, so as to become a life-member." Then in a very few years, especially if you assist the Editor, you will find that a journal of twenty pages per week of really good matter is quite bulky enough for your bookshelves, and will cost you next to nothing.

London, April 15, 1902. J. C. Hyslop.

I read with interest the report on the discussion of the Bradford chemists on the management of the Journal. Many points were raised which are, or should be, of great interest to chemists. During my five years' experience in the trade I have not met one chemist who is a zealous supporter of the Society. Certainly there are earnest supporters, but the majority of chemists appear to have a pique against the official body. This resentment they are instilling into their assistants and apprentices. Does it not behove the Society to investigate and, if possible, explain away, these grievances? During my two years as a student-associate I have not noticed any effort in this direction. Is it a case of contempt or incompetence? I have sought information from various chemists as to the aims of the Society. In reply they suggest that the Society exists to receive examination fees and to "pluck" unfortunate candidates. That pill requires coating before it can be swallowed. Still, such a state of mind is not a credit to the body pharmaceutical. Pardon my temerity if I presume to offer a few suggestions. Let the Society endeavour to reach the student-associates and assistants. This could be done by making the Journal an aid to study, and not a mere recipient of stray articles. What a creditable student desires and appreciates is a good course of articles within his "ken" on subjects required for the Minor, which would be a great aid. For many weeks I have looked for the Students' Column; but, alas, it is not. Also, why is not more written of the Society and its aims? Again, would not the Journal be read more if it contained matter more congenial to a chemist's life? I would not like to see the technical character of the Journal submerged, but would like to see articles on the various side lines and the developing of the trade in different branches, and on many other matters bound up with a chemist's life. To be brief, let the Journal be more "homely," and advocate the fellowship of the trade. Moreover, let chemists themselves throw off their lethargic demeanour, join the Society, air their grievances, and generally make things "hum." I do not think the official body is so much to blame as chemists in general are for their lethargy. As a student for the Minor I appreciate the Society's endeavour to enforce efficient qualification. Its efforts in that direction are wise, and in time should bear fruit. The sturdy oak grows not in a day. As a student-associate of two years' standing, I send this fully conscious that my views may be all askew. I am but young, and only

April 12, 1902. A Student-Associate (129/42).

The Sale of Poisons.

The object the Legislature had in view when passing the Poisons Bill was to restrict the sale of poisons and to be able to trace it in case of accident or criminal misuse. Probably Mr. Boa may consider himself a servant of the public and feel bound to serve them with pennyworths of chloroform. I certainly object to have such views imposed upon me. I shall serve the public only as long as they pay me well for my services. The case of hotel-keepers quoted by Mr. Boa does not apply, as they do not supply scheduled poisons and they are not bound to supply liquors on demand. I much doubt if there be any tendency among chemists to raise unnecessary objections when poisons are demanded; the desire to do business at a profit would prevent that. Perhaps Mr. Boa can tell how we can "make an effort" so as to be able to supply interesting strangers with perchloride of mercury. I can only see two ways of doing it, viz., by breaking the law or sending around the town crier to find a witness. Both plans are objectionable. I always send out laudanum in a poison bottle with a red label, and shall continue to do so until the times alter. Mr. Boa has made a good suggestion about coroners. May I suggest that the Society's solicitor should write to those gentlemen; it might have a more soothing effect upon the bumptiousness sometimes displayed.

London, April 9, 1902. John Hick.

The Martindale Memorial Fund.

Kindly hand over cheque herewith enclosed (value seven guineas) to the secretary of the "Martindale Fund," with a request that the several donors have sent to them an acknowledgment. I may say that if enough money could be raised to found a scholarship, it would, I think, be the most appropriate memorial of Mr. Martindale; failing this, perhaps no better memorial can be found than a "Martindale medal" and a prize of books, for Minor men. Would it not be better to bring the matter more prominently before the pharmaceutical world?

Carlisle, April 10, 1902. Jno. Hallaway.

Subscriptions for the Martindale Fund.

C. M. Dalziel, Carlisle	£1	1	0
Jno. Hallaway, Carlisle	1	1	0
J. J. Robinson, Carlisle	1	1	0
Thos. Ridley, Carlisle	1	1	0
Jno. Robson, Carlisle	1	1	0
Hy. Sawyer, Carlisle	1	1	0
P. Simpson, Carlisle	1	1	0

Powdered Nux Vomica.

Concerning the paragraph where Mr. Abraham states "that he never remembers seeing powdered nux vomica prescribed for human beings," I beg to inform him that in Switzerland and Germany it is daily prescribed in pills, powders, and wafers, the extract itself being rarely used.

London, April 5, 1902. Alfred Roe.

Cart for Syphons.

Can any reader give us the address of the maker of a light hand cart with bicycle wheels suitable for two or three dozen syphons?

Sheringham, April 9, 1902. W. H. Burrell and Co.

The Preparation of Zinci Oleas.

A few weeks ago I noticed some letters in the *P.J.* relating to the preparation of zinci oleas. As I often have this substance to prepare I read them with interest. The great difficulty seems to be to dry the precipitated oleate without spoiling its whiteness. Since then I have prepared a sample, and have obtained a product which seems quite satisfactory, the following being my process. I added the solution of zinc sulphate to the solution of soap at about 85° C., and at once allowed it to cool. I then collected the oleate on a filter, washed it with hot distilled water, and allowed it to drain. Then I placed it in an open vessel on a stove, and heated it with a large quantity of distilled water, when the oleate became pasty in consistency. I worked it into a lump with a rod and allowed it to cool. I then poured off the water, added a second quantity, and again heated. Again working the pasty oleate into a mass, I allowed it to cool, and poured off the water, which now gave no trace of precipitate with barium chloride. After allowing the lump of oleate to drain on filter paper for a short time, I cut it up in very small pieces, and spread them out on filter paper. In about an hour's time I powdered them in a mortar, obtaining a smooth, dry powder, a specimen of which I enclose. From my experience I conclude that the oleate should not be heated sufficiently to melt it, and that drying by heat afterwards should also be avoided. I send these particulars in case they may be of assistance to others who have a difficulty with this preparation.

Wolverhampton, April 15, 1902. Hugh W. Wallis.

Suppository Making—A Suggestion.

The following is a method of administering larger quantities of a drug than can conveniently be done by the ordinary suppository:—Cases are first made by pouring into a well-oiled suppository mould equal parts of oil of theobroma and white wax, fairly hot, and immediately pouring out again, thus leaving a shell of wax. As soon as cold and while still in the mould the cases are filled with the powder, etc., by means of a "J" pen nib or the small blade of a penknife, and after having been shaken well down a cap of melted oil of theobroma is poured over each when just on the point of setting. Those sent herewith contain six or seven grains of iodoform in each, and as can be seen by the section each would take at least eight grains more. After the whole has set the suppositories can be removed in the usual way. I do not remember seeing this method recorded before, and thought perhaps it would prove interesting as well as useful.

London, April 3, 1902. A. W. Nunn, F.C.S.

[Mr. Nunn's suppositories, made as described, are well-finished and, apart from the fact that their colour is not quite uniform throughout, they do not differ in appearance from suppositories made in the usual manner.—Ed. *P.J.*]

The New Budget.

Mr. Vincent Wood writes to express regret that the Government has again ignored the wishes of the manufacturing classes by not imposing a small tax on the manufactured articles which come into this country from abroad, and could easily be collected under our present Customs arrangements. The trade he is engaged in is inundated with German-made goods, such as suspenders, belts, and other appliances, and although in some cases they are cheaper, they are not to be compared with our own British-made goods, and if our people wish to have foreign made goods, they should have the pleasure of paying adequately for them, and not buy them to the detriment of our country.

Medicine Stamp Duty.

A Correspondent, writing in reference to the medicine stamp duty, suggests that no liability to stamp duty should be incurred through any wording of the label attached to any medicinal article prepared and sold by a legally qualified chemist. That freedom from liability would presuppose the absence of any claim of proprietorship or special secret formulæ in connection with the particular articles. But with official preparations that are known, authoritatively admitted and approved of as remedies, the wording on the labels should include any information that is requisite as a guide to the proper use of the medicines, and the use of such directions should not render the medicines liable to stamp duty when sold by legally qualified chemists. That appears to be the intention as well as the effect of the exempting provisions of all the Medicine Stamp Acts.

Ferrichthol.—This iron compound of ichthyol occurs as an amorphous, non-hygroscopic, light, dark brown, odourless and tasteless powder, dissolved by most solvents and by dilute acid or alkaline solutions. It contains 3·5 per cent. of iron in intimate organic combination. It is, probably, as readily absorbed by the intestines as other organic iron preparations.

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders.

Notice to Leave (R. F.—72/20).—A month's notice is required.

Hair Restorer (J. S.—72/21).—It is understood to consist of ordinary petroleum, perfumed to cover its distinctive odour.

New Zealand (J. S.—72/22).—We have no special information on the subject, but understand there are good openings for well-educated men with capital.

Water-Glass for Preserving Eggs (G. A. B.—72/29).—Dilute the thick syrupy water-glass of commerce with nine times its volume of water, and immerse the eggs in the liquid.

Filters (G. L.—72/28).—The Berkefeld Filter Co. now supply the "Tubor" germ-proof filters. The Berkefeld filter can now only be obtained from the Nordtmeyer Berkefeld Co., 73a, Queen Victoria Street.

Euchrisma (A. J. P.—72/16).—This is a similar preparation to the familiar "brilliantine," but contains less castor oil and more spirit. The following formula is from MacEwan's 'Pharmaceutical Formulas':—Castor oil, 1½ fl. oz., clove oil, 5 minims, oil of verbena, 5 minims, rectified spirit, 10 fl. oz.

Weed Killer (J. M. H.—72/24).—Arsenic 66, caustic soda 35, crude carbolic acid 5, water *q.s.* to produce 200 fluid parts. Boil the arsenic and caustic soda with some of the water until the former has dissolved, making up the quantity lost by evaporation. Cool, add the carbolic acid, and make up to the specified volume. One part with 50 of water to be used for killing weeds on paths, etc. See that it be handled with caution and stored in properly-labelled vessels

Hermann's Platino-Aceto-Osmic Mixture (R. B.—72/26).—It is a mixture of 1 per cent. platinic chloride solution, 15 parts; glacial acetic acid, 1 part; and 2 per cent. osmic acid, 2 to 4 parts. Hermann found that this mixture constitutes a better fixing agent for general histological work than Flemming's mixture, in which chromic acid takes the place of platinic chloride, protoplasmic structures being more satisfactorily preserved, while there is no precipitation of the liquid albuminoids of the tissues, as happens when the chromic acid preparation is used. You should be able to procure the mixture from any wholesale house.

Cod Liver Oil Emulsion (H. J. F.—72/23).—It is not possible to prepare an emulsion of cod liver oil which shall be "absolutely tasteless," as you put it. Presumably you mean that the fishy taste should be covered or masked by some aromatic substance. The following gives a very good emulsion, but the product is not tasteless:—Irish moss 10, water 500; boil gently together for 30 minutes, making up the water lost by evaporation; strain through fine muslin without pressing, so as to obtain 450 fluid parts of strained liquid. Meanwhile, mix powdered tragacanth 3, cod liver oil 500, sodium hypophosphite 17·5, calcium hypophosphite 17·5, oil of cinnamon 0·5, and oil of bitter almonds, *q.s.*, add the mucilage of Irish moss, and emulsify. You can alter the flavour to taste. Some prefer a little wintergreen oil. Of course, the cod liver oil should be carefully selected so as to obtain an emulsion with a minimum fishy flavour.

Pharmaceutical Journal.

A Weekly Record of Pharmacy and Allied Sciences.

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Editorial Office: 17, BLOOMSBURY SQUARE, W.C.
Publishing & Advertising Office: 8, SERLE STREET, W.C.

Members of the Pharmaceutical Society must address all communications with reference to the transmission of the Journal, to the Secretary, 17, Bloomsbury Square, London, W.C.

LONDON: SATURDAY, APRIL 19, 1902.

THE SOCIETY'S JOURNAL.

If the attention that has lately been directed to the circumstances connected with the production and transmission of the Society's official organ should be as vigorously followed up as is desirable, there is a tolerable certainty that the great importance of the Journal, in various ways, will be more fully appreciated than has hitherto been the case and that some prevailing misconceptions will be removed. The reputation that has been acquired by the *Pharmaceutical Journal* and also reflected upon the Society, is well indicated by a statement, recorded with the authority of the late John Mackay, that he had heard men of high scientific position and attainments declare that "if the Pharmaceutical Society had done nothing more than give to the world its well conducted and valuable Journal, it would have been worthy of all encouragement and praise." That statement marks the essential, and indeed necessary, difference between the *Pharmaceutical Journal* and the trade publications which are commonly spoken of as the Pharmaceutical Press. It was made at the time when the Journal was published monthly and the speaker's intention was to encourage the weekly publication which was then contemplated and commenced shortly afterwards.

After the weekly publication had been continued with success for some fifteen years an opinion was expressed that it was first-rate, but not big enough and that there should be more of it, that it should be enlarged, its scope extended, more money put into the production of it, so as to extend its influence and increase the membership and efficiency of the Society, by advocating its claims on chemists and druggists as the only body that could protect them and their interests. That suggestion, put forward by Mr. R. A. Robinson who has recently become a member of the Council, created, at first, some alarm, as had been the case with the previous proposal of a weekly publication; but it was warmly supported by several members of the Society, from various points of view, and a resolution was passed requesting the Council to consider the matter. After long and careful consideration, Mr. Robinson's suggestions were acted upon, with such immediate approval and success, that the present issue of the Journal was started on the expanded lines proposed by Mr. Robinson. Naturally there was a considerable increase in the expenditure and, since that time, the outlay for production and transmission has figured more conspicuously on the expenditure side of the Society's financial statements. The particular form in which those statements are placed before the members has, unfortunately, had a prejudicial influence; it has given rise to an idea that the Journal is a source of loss to the Society, some members having even been led to imagine that the Journal was a drain on the resources of the Society. In that way the apparent "adverse balance" has frequently been made the subject of unfavourable comment, and though the fallacy was repeatedly refuted by Mr. Carteighe, during his presidency, it has, like other evil weeds, grown up again and again.

It is unnecessary here to do more than point to the fact that, from an account point of view, this "adverse balance" which has caused so much unnecessary dismay, is a kind of monstrosity; it cannot be spoken of as loss, inasmuch as there cannot be any consideration of profit and loss, in regard to an account that has only one side. But as any stick is good enough to beat a dog with, that lop-sided account has been made use of, to the detriment of the Society, as the basis for representations that the Society was engaged in a ruinous speculation and was dropping several thousands a year. That discreditable fiction is now exploded; it should never have been given currency to, even under the keen stimulus of competition. But though the available Journal account, in respect to production and transmission, is a one-sided affair, the Journal has, quite incidentally, an important source of revenue connected with it. Its extensive circulation, among the most important members of the trade, has always made it a favourite medium for advertisers desirous of extending their business relations with chemists and druggists. The return from that source has frequently been greater than the subscription income; always sufficient, in fact, to cover a very large portion of the expenditure in production and transmission, so that the return, arising from that source, is really distributed among the members of the Society, as a kind of bonus or dividend which actually exceeds the amount of their several subscriptions. In addition it may be stated that two years ago very considerable economy was effected in one branch of the expenditure, amounting to upwards of eighteen hundred pounds a year, and had that reduction not been effected, the cost of the Journal to the Society, in the past year, would have been upwards of thirteen hundred pounds more than it really was. Space will only allow of a reference to these salient facts showing that, as a property in which every member of the Society has a share, the Journal is worth their attention, for the blighting shadow of the "adverse balance" still hangs over this subject, and has begotten the idea that the Society cannot afford to supply the Journal to its members.

ANNOTATIONS.

The Budget disclosed by the Chancellor of the Exchequer on Monday night is distinctly a War Budget, and everyone is hit by it. Income-tax payers—a class to which, it is to be hoped, all registered chemists belong—are called upon to pay another penny in the pound, the tax being thus raised from one shilling and twopence to one shilling and threepence, or twenty-five per cent. more than it was two years ago. That is serious enough, but chemists as traders are also hit by the proposed extra penny on bankers' cheques and, both as householders and traders, by the duty on imported corn and flour. Chemists and druggists as a class, therefore, are certainly being called upon to pay their full share of the war expenses; indeed, it is a serious question whether they are not asked to pay more than their fair share, especially in view of the fact that the increased duty on spirit and the tax on sugar already operate unfairly against them. The difficulty experienced by the chemist and druggist is that he cannot, in most cases, recover the small amounts added to the prices of spirit and sugar, and he is now likely to experience the same difficulty in connection with the new tax on corn, grain, flour, and meal.

For the New Duties will, apparently, be applied to many articles which cannot reasonably be brought under the head of either grain or flour. Thus, the Custom House officials have informed merchants who called for information that the following articles will all come under the new tax:—

Class I.—3d. Per Cwt.

Corn or grain, not milled or ground
Wheat
Barley
Oats
Rye
Maize or Indian Corn
Buckwheat
Bear or Bigg

Peas and Dholl (other than green, whether fresh or preserved; not grain)
Beans (not grain)
Haricot Beans (not grain)
Locust Beans (not grain)
Lentils (not grain)
Rice

Class II.—5d. Per Cwt.

Flour
Malt
Groats
Barley meal
Barley (pearled)
Oatmeal
Rye Meal and Flour (not grain)
Pea meal
Bean meal (beans)
Maize meal
Macaroni
Vermicelli
Starch (potatoes)
Farina (potatoes)

Arrowroot (natural root)
Mandioca flour
Semolina
Cassava powder (natural root)
Manna croup
Potato flour (potatoes)
Tapioca (manioc)
Sago (sago plant)
Sago meal (sago plant)
Rice meal
Rice dust
Shredded wheat
Preparations containing any of the above (hundreds of articles)

Interpretation of the terms "flour" and "meal" so as to include many of the articles in Class II. can only be regarded as a strained one, but that opinion will not avail traders much now that the Custom House officials have stated definitely that all the articles named will be chargeable with duty.

The Probability is that such wide interpretation of the terms "corn," "grain," "flour," and "meal" will result in so many articles being swept into the Chancellor's net that the new tax will produce much more than the £2,650,000 he estimates. The *Daily Chronicle* publishes the following table, showing the quantities of corn, etc., imported during 1901:—

	Cwts.
Wheat	69,747,830
Flour	22,575,230
Barley	22,091,530
Oats	22,476,070
Peas	2,042,311
Beans	1,871,660
Maize	51,372,800
Oatmeal	840,335
Maize meal	1,638,026
Other kinds of corn and meal	1,733,015
Rice, rice meal, and flour	6,757,323
Starch, farina, and dextrin	1,413,317

These articles alone, it is shown, would yield no less than £2,770,000, if placed in two groups, and the amount calculated which the Chancellor of the Exchequer should receive from them on the basis of the new imposts. But those articles constitute only a part of the commodities which will be taxable, in accordance with the statement of the Custom House officials. And, as the *Daily Chronicle* points out, only a careful examination of the Board of Trade returns can show how many more millions will be collected if that statement proves to be correct.

The American Pharmaceutical Association does an excellent service to pharmacy by the production annually of its volumes of 'Proceedings.' The volume published last year, which contains the record of the transactions at the forty-ninth annual meeting of the Association, held at Saint Louis, Mo., is as well produced as any of its predecessors, and contains the usual report on the progress of pharmacy, which is the most complete compilation of its kind in the English language. The abstracts in this section of the book are admirably done and, taken as a whole, ably summarise the work done in pharmacy and the allied sciences during the year ended June 30, 1901. Pharmacists who desire to keep themselves thoroughly abreast of the times will usually find what they require concerning the subjects mentioned in the columns of the *Pharmaceutical Journal*, but they would do well to have the handy volumes published by the A.Ph.A. in addition. The price of the later volumes is five and a half dollars each, bound in cloth, but discounts, ranging from ten to sixty per cent., are offered on sets of volumes, according to the number in a set.

The A.Ph.A. also Manifests its Activity in other ways than in publishing its transactions. Thus, it supplies its members with stout envelopes, so made that they can be hung by eyelets in convenient and conspicuous places near dispensing counters. In those envelopes the members are requested to deposit prescriptions (copies) that are odd, difficult, or in any way interesting; notes upon dispensing and pharmaceutical processes or manipulations; memoranda of singular occurrences and unusual happenings; reports upon the pharmaceutical behaviour of new drugs, chemicals, and preparations; everything, not generally known, that will be of service or profit to the practising pharmacist. On or before July 1 the members secure the flaps of the envelopes and post them to the Committee on Practical Pharmacy and Dispensing, with the result that any information of real value becomes disseminated generally. The same Committee asks the members for suggestions, and supplies a useful list to indicate the style of matter which may be brought before the Section on Practical Pharmacy and Dispensing, the suggestions being such as may come under one of the three heads:—"Subjects," "Formulæ," and "Exhibits." Thus, it is asked whether mortar and pestle, or spatula and tile, offer the greater advantages for making pills, ointments, or suppositories, considering time and efficiency? Again, new formulas for petroleum emulsions and other preparations are asked for, while, under the head of "Exhibits," suggestions are asked for concerning suppository machines, capsule filling, and similar points.

The A.Ph.A. Committee on Scientific Progress is equally practical in its methods. It points out that investigations of analytical methods of all kinds are always acceptable, and that the various assay methods for different drugs might be compared with advantage, while work on plant analysis and any improvements by way of analysis are always of interest. Papers on the macroscopic and microscopic characteristics of powdered vegetable drugs would, it is pointed out, be very timely and desirable, with special reference to a possible official description to be embodied in the next United States Pharmacopœia and other works on the subject. Theoretical considerations always find a place in the deliberations of the Scientific Section, descriptions of manufacturing processes and products of the same being very acceptable. Dissertations on bacteriological subjects, botanical subjects, water analysis, food analysis, artificial foods and allied subjects scientifically considered are also stated to be of general interest. The Committee suggests that it would also be very timely to have some papers on the origin and growth of the manufacture of fluid extracts, or tablets, or the sugar-coating of pills and the preparation of other forms of medication, while an historical review of the manufacture of quinine and morphine salts would also be of interest. Many of those industries, it is pointed out, are of American origin and development, and are, therefore, of national interest. In conclusion, it is worthy of notice that Article IV., Chapter IX., of the Association's bye-laws provides that any person preparing a paper for the Association which will require more than ten minutes for its reading must accompany the same with a synopsis which can be read within ten minutes' time, and that the paper and synopsis must both be furnished to the Committee of the particular section to which it refers previous to the first session.

The Imperial Institute is to be handed over to the Board of Trade, the existing corporation being dissolved and an advisory committee appointed to assist the Board. In order to effect the change, a Bill is about to be introduced into Parliament, and the first advisory committee named in the Bill is to consist of Mr. T. H. Elliot, C.B., General Sir Owen Tudor Burne, Lord Strathcona, the Hon. Henry Copeland, the Hon. William Pember Reeves, Sir Walter Peace, Sir R. Herbert, and Lord James of Hereford and Sir Frederick Abel, the two last representing the existing corporation. It is proposed that the first members of the advisory committee shall act until December 31, 1903, but the term of office of the two members representing the existing corporation may be extended, if found expedient, for three years longer. Each member subsequently appointed may hold office for three years, though the constitution of the committee may be varied at any time by an Order in Council. The present endowment fund of the Institute consists of securities representing a sum of £140,000, and is vested in trustees. According to the draft Bill, the trustees are in future to be the persons who are for the time being the First Lord of the Treasury, the Colonial Secretary, the Secretary for India, and the President of the Board of Trade. The Institute building and all other property of the corporation will be under the management of the Board of Trade, and used for carrying out the purposes of the Institute, in addition to such other similar purposes as the Board may determine, having regard to the commercial and industrial interests of the Empire. It is also proposed that the Board, after consulting the advisory committee, shall make provision in the Institute building for giving to the life members of the existing corporation privileges similar, so far as practicable, to those enjoyed by them under the charter of the existing corporation.

In Reference to the Statement in the report of the Library, etc., Committee (see *P.J. ante*, p. 298), it may be pointed out that the desire of the Journal Sub-Committee that the Journal text should be limited to twenty pages has been strictly carried out since the beginning of the present year, with as much regard for the publication of reports, etc., as could be exercised. This week, however, there is a departure from that rule by the addition of eight extra pages for the publication of arrears, in addition to the current matter of the week.

POISONING CASES.

The deaths caused by poison, reported since our last issue, number sixteen—eight accidental cases and eight suicides, thus:—

Poison.	Accident.	Suicide.
Acid Fumes	1	
Aconite Liniment	1	—
Ammonia	—	1
Carbolic Acid	—	1
Chloroform	4	—
Hydrochloric Acid	1	—
Laudanum	—	1
Rat Poison	—	1
Sheep Dip	1	—
Vermin Killer	—	1
Other Poisons	—	3

Acid Fumes.—An elderly woman was killed by the fumes given off while cleaning a copper urn with a mixture of hydrochloric and nitric acids.

Aconite Liniment caused the death of a colliery manager at Blackheath, Rowley, whose wife gave it to him in the dark in mistake for medicine.

Ammonia Solution was purposely taken with fatal results by a woman at Clapton.

Carbolic Acid was taken with suicidal intent by a girl of twenty, living at York.

Chloroform, used as an anæsthetic, caused the deaths of four men, one each at Middleton (Kent), Newcastle-on-Tyne, Preston, and St. Bartholomew's Hospital, London.

Hydrochloric Acid, taken inadvertently, caused the death of a Hackney gasfitter.

Laudanum, purchased in small quantities which were subsequently mixed together and drunk, caused the death of an Edinburgh man.

Rat Poison, described as "green stuff," was purposely taken by a labourer's wife at Chorley.

Sheep Dip killed the landlord of an inn at Chepstow. It consisted of strong solution of caustic soda, with about 15 per cent. of cresylic acid, and was found in a bottle labelled "Spanish Port." The deceased thought it was claret and drank about two teaspoonfuls, with fatal results.

Vermin Killer was purposely taken by a licensed victualler at Bewdley.

In addition to the foregoing, cases of suicide by poison are reported from Alvechurch, East Ham, and Worsley, but the name of the poison is not given in any of the three cases.

Several cases of attempted poisoning have also been reported. In one instance a woman was charged at Faversham Quarter Sessions with attempting to commit suicide by taking laudanum which had been supplied to her ten-year-old daughter by Mr. Evan Jenkins, chemist and druggist, Faversham. In reply to questions put to him at the trial, Mr. Jenkins is reported to have stated that it was not customary to ask what laudanum was required for, and if the question was asked, the answer would usually be incorrect. The Recorder thought it was an extraordinary thing that laudanum could be sold freely in any quantity so long as the bottle was properly labelled, but added that, of course, Mr. Jenkins was not responsible for that.

Obituary.

Falkner.—On April 11, Richard Falkner, Chemist and Druggist, Oxford, formerly of Banbury. Aged 75.

Lewis.—On April 7, Owen Lewis, Chemist and Druggist, Llangefni. Aged 61.

MacEwan.—On April 15, at 37, Hornsey Lane Gardens, Highgate, Agnes Margaret MacEwan, wife of Peter MacEwan, Ph.C.

Standring.—On March 31, John Standring, Chemist and Druggist, Manchester. Aged 70.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

Library, Museum, School, and House Committee.

At a meeting of this Committee, held on Tuesday, April 15, the Librarian and Curator presented reports, including the following particulars:—

ATTENDANCE IN LIBRARY.

	Total.	Highest.	Lowest.	Average.
March (London)	414	33	6	18

CIRCULATION OF BOOKS.

March.	Total.	Town.	Country.	Carriage Paid.
London Library	223	140	83	£0 18s. 0d.
Edinburgh Library........	261	152	109	£0 4s. 11d.

DONATIONS TO THE LIBRARY (LONDON).

Proprietors of the *Chemist and Druggist*, London:—Diary for 1902.

Mr. P. MacEwan, London:—Pharmaceutical Formulas. Fifth Edition, 1902.

University College of South Wales and Monmouthshire:—Calendar, 1901-2.

British Congress on Tuberculosis:—Catalogue of the Museum, 1901.

Mr. J. H. Maiden, Sydney:—Eleven Pamphlets.

The Editor of the *Dioptric Review*:—Vol. V., 1901.

Ecole Supérieure de Pharmacie de Paris:—Theses by MM. Champenois, Vaudin, and Thibault.

Mr. C. J. S. Thompson, London:—Poison Romance, etc. Second Edition.

American Pharmaceutical Association:—Proceedings, Vol. XLIX.

Mr. J. Medley Wood, Durban:—Natal Plants, Vol. III., Part III.

ATTENDANCE IN MUSEUM.

	Total.	Highest.	Lowest.	Average.
March	499	42	8	21

DONATIONS TO THE MUSEUM (LONDON).

Messrs. Hale and Son, London:—Sample of recent importations of *Strophanthus* Seed.

Messrs. Wright, Layman, and Umney, London:—Specimen of genuine "Mandala Brand" *Strophanthus kombe* Seed, and of Pernambuco Jaborandi.

Mr. T. Wardleworth, Liverpool:—Specimen of Rio Jaborandi.

Messrs. Parke, Davis and Co., London:—Specimen of genuine "Mandala Brand" *Strophanthus kombe* Seeds.

Mr. J. Medley Wood, A.L.S.:—Natal Plants, vol. iii., pt. 3.

TO THE HERBARIUM.

Mr. Albert Wilson, Ilkley:—Fresh specimen of *Scopola carniolica*, in flower.

DONATIONS TO THE MUSEUM (EDINBURGH).

Mr. A. H. McNaught, Greenock:—Specimen of Maize Oil.

DONATIONS TO THE LIBRARY (EDINBURGH).

Mr. P. MacEwan, London:—Pharmaceutical Formulas, 5th ed., 1902.

Pharmacy Board of Victoria:—Pharmaceutical Register for 1902.

PURCHASE OF BOOKS.

The Committee authorised the purchase of the undermentioned books:—

For the Library in London.

Caspari, Pharmacy, 2nd ed., 1902.

For the Library in Edinburgh.

Quain, Dictionary of Medicine, 3rd ed.

Ramsay, Gases of the Atmosphere.

Examinations in London, April, 1902.

MAJOR EXAMINATION.

Candidates examined 42
" failed 22
" passed 20

Barritt, Percy; Streatham
Bennett, Reginald Robert; London
Cocking, Thomas Tusting; London
Girling, William Robert; London
Hanbury, Frederick Capel; London
Hill, Arthur Charles; Manchester
Hills, James Stuart; London
Hole, William Westcott; London
Hooper, Elsie Seville; London
Hunt, George Paul Allen; London
Jones, John William; Dartford
Male, Charles Edgar; London
Neathercoat, Ernest Tom; London
Paterson, A. G. C.; Scarborough
Phillips, Horace Stock; Wigan
Reavley, Robert; London
Robinson, Richard A., jun.; London
Smith, John Beddall; Rusholme
Walker, George T.; Birmingham
Young, William T.; Leicester

Examinations in Edinburgh, April, 1902.

MAJOR EXAMINATION.

Candidates examined and passed 3

Baxter, Alexander C.; Edinburgh
Bintcliffe, John W.; Holywell Green
Rodwell, Henry; Glasgow.

MINOR EXAMINATION.

Candidates examined 122
" failed 79
" passed 43

Allan, David Souter; Aberdeen
Anderson, William G.; Edinburgh
Blackburn, Sidney Richard; Newcastle-on-Tyne
Brittain, Richard H.; Edinburgh
Bruce, F.; New Deer, Aberdeen
Cox, Horace Nelson; Edinburgh
Craig, Thomas Forrest; Kelso
Dainty, J. E.; Barrow-in-Furness
Dewar, A. O. C.; Cupar, Fife
Dick, James Anderson R.; Forfar
Forrester, Ethel M. G.; Edinburgh
Fraser, David Wilson; Ayr
Frost, William Thomas; Worthing
Gibson, William Wightman; Buckie
Granger, Ernest Richard; Whitby
Gross, G. F. C.; Barrow-in-Furness
Henderson, John Reed; Glasgow
Jones, Arthur Alderson; Liverpool
Jones, Benjamin Saunders; Crewe
Kelman, John; Edinburgh
Kirby, William; Northallerton
Lishman, Arthur; Newcastle-on-Tyne
McArthur, Donald; Glasgow
McDiarmid, George; Edinburgh
McGeorge, Richard; Edinburgh
McHardy, Alexander; Dalkeith
MacLean, James; Conon Bridge
McLellan, John Y.; Kirkintilloch
Maxwell, William; Kelso
Michael, George; Edinburgh
Mungall, Allan; Avonbridge
Nicolson, Charles; Glasgow
Parker, Benjamin; Derby
Pollock, Thomas Lowthian; Penrith
Pugh, Francis Charles; Liverpool
Pyatt, George Henry; Nottingham
Reid, David; South Shields
Smeddles, G. R.; Barrow-in-Furness
Swan, William; Dumfries
White, C. H.; Burton-on-Trent
Whyte, Edward; Dundee
Wilkinson, John Feather; Leeds
Wilson, Stewart; Glasgow

Major Examination Questions (London).

CHEMISTRY.

Time allowed, Three Hours.

[*Six questions only are to be attempted; and of these, at least two must be taken from Part II.*]

PART I.

1. Describe some suitable method for determining the atomic weight either of magnesium or of iodine. Explain how you would carry out the experiments, and mention the chief errors to which the method would be liable.

2. Give equations representing the action of sulphuric acid on (*a*) potassium dichromate, (*b*) potassium iodide, (*c*) potassium permanganate, (*d*) potassium ferrocyanide. State whether in any case the kind of action depends on the quantity or concentration of the acid or on the temperature.

3. Give an account of the preparation and properties of the following substances:—(*a*) Nitrogen trioxide, (*b*) phosphorus tetroxide, (*c*) acetylene, (*d*) sodium thiosulphate.

4. Describe the method of preparing metallic nickel. What are the chief chemical properties and practical uses of nickel? Describe points of chemical similarity between iron and nickel and points of difference between nickel and cobalt.

5. Describe two methods of separating and detecting calcium, barium, and strontium in qualitative analysis. Explain the chemistry of the operations.

6. Describe in detail a method of estimating either (*a*) the amount of carbon dioxide in air or (*b*) the amount of ammonia in drinking-water.

PART II.

7. What are the distinguishing properties and reactions of sulphonic acids, secondary alcohols, amines, iso-paraffins, phenols?

8. Describe the methods of preparation of succinic acid, acetone, aniline, benzaldehyde.

9. What constitutional formulæ might be given to a body of the molecular formula $C_4H_{10}O$? How would you decide between the formulæ?

10. ·2467 gramme of a monobasic organic acid gave on combustion ·4400 gramme carbon dioxide and ·1800 gramme water. The silver salt contained 59·7 per cent. of silver. Calculate the molecular formula of the acid and give a possible constitutional formula.

PHYSICS.

Time allowed, Three Hours.

1. Describe exactly how you would proceed to determine the electrical resistance of a piece of copper wire.

2. What do you understand by the term "latent heat"? Give illustrations, and show, in one instance, how it may be determined.

3. Describe a calorimeter, and show how it may be employed to determine the heat of combustion of a substance.

4. The focal length of a convex lens is nine inches. If an object is placed one foot in front of the lens where will the image be formed?

5. Explain the term "dissociation." What would you expect to be the effect of (*a*) temperature and (*b*) pressure on the dissociation of ammonium chloride?

6. Describe an experiment showing the relative rates of diffusion of two gases. Explain how the rate of diffusion of a gas may be used to fix its specific gravity.

BOTANY (A).[*]

Time allowed, Two Hours.

[*Not more than* THREE *questions are to be attempted.*]

1. What is Latex? Describe the structure of the special tissue in which it occurs.

2. Give an account of the life history of one parasitic Phanerogam, pointing out any special structural adaptations to its special mode of life.

3. What is meant by Photosynthesis? Mention the conditions essential to the proper discharge of this function.

4. Describe the structure of the cone of *Selaginella*. Compare the megaspore of *Selaginella* with the ovule of a Gymnosperm.

5. Describe in detail the structure of the common Mushroom (*Agaricus*). Deduce from your answer the characters of the Group of Fungi to which it belongs.

BOTANY (B).

Time allowed, Two Hours.

[*Not more than* THREE *questions are to be attempted.*]

1. Write a short account of the structure and development of Periderm in stems.

2. Explain the difference between a parasite and a saprophyte. Give a short account of the life history of one saprophyte.

3. How would you ascertain the amount of carbon dioxide evolved from a plant in a given time? Sketch the apparatus you would use.

4. What special features distinguish the Mosses from the Liverworts? Describe in detail the structure of the sporogonium of a Moss.

5. Describe the structure of the thallus of a Lichen. How is reproduction effected in this group of plants?

BOTANY (C).

Time allowed, Two Hours.

[*Not more than* THREE *questions are to be attempted.*]

1. Explain how intercellular spaces are formed in plants, and state their chief uses.

2. What are the chief characters which separate the Malvaceæ from the Geraniaceæ?

3. What is meant by Symbiosis? Illustrate your answer by a *concise* description of two examples.

4. Explain the function of Calcium in the nutrition of plants. In what parts of the plant, and in what forms, do you find this element, and how can it be recognised?

5. What are the characteristics of the vascular bundle of a Fern? Describe accurately the structure of the sieve tubes and wood vessels.

PRACTICAL BOTANY.

Time allowed, One and a Half Hours.

1. Make preparations illustrating the structure of A. Leave explanatory sketches of your preparations.

2. Dissect the specimen B. Draw and name the parts.

3. Comment on any points of morphological or biological interest exhibited by C.

4. Refer the specimens D and E to their respective Natural Orders, giving your reasons in full.

MATERIA MEDICA (A).[†]

Time allowed, One Hour.

[*Only two questions are to be answered.*]

1. Describe a process which might be employed for the preparation of Quinine. What tests would you apply in order to determine the purity of Quinine Sulphate? Mention the official salts, and state what are the chief practical advantages of having other salts than the sulphate official.

2. How are the following obtained:—Oil of Eucalyptus, Oil of Lemon, Oil of Cade, and Olive Oil? How would you determine their freedom from adulteration?

3. Mention the chief diagnostic characters (as far as they can be ascertained by the use of a lens) of the following roots:—Taraxacum, Pyrethrum, Belladonna, and Liquorice.

MATERIA MEDICA (B).

Time allowed, One Hour.

[*Only two questions are to be answered.*]

1. Describe a process which might be employed for the preparation of Cocaine. What tests would you apply in order to determine the purity of Cocaine Hydrochloride? Both the alkaloid and its hydrochloride are official: briefly indicate the different vehicles for which each is specially suited.

2. How are the following obtained:—Copaiba, Prepared Storax, Benzoin, and Wool Fat? How would you determine their freedom from adulteration?

3. Mention the chief diagnostic characters (as far as they can be ascertained by the use of a lens) of the following barks:—Quillaia, Elm Slippery Elm, Cascara Sagrada, and Virginian Prune.

MATERIA MEDICA (C).

Time allowed, One Hour.

[*Only two questions are to be answered.*]

1. Describe the official process for the determination of Morphine in Opium or in Tincture of Opium. Briefly discuss each step involved.

2. How are the following obtained:—Chrysarobin, Elaterium, Milk Sugar, and Jalap Resin? How would you determine their freedom from adulteration?

3. Mention the chief diagnostic characters (as far as they can be ascertained by the use of a lens) of the official umbelliferous fruits.

PRACTICAL MATERIA MEDICA.

Time allowed, One and a Half Hours.

Make histological preparations of the root supplied, and leave two mounted for inspection. Give an account of its structure and cell contents, drawing particular attention to any features of diagnostic value.

Major Examination Questions (Edinburgh).

CHEMISTRY

Time allowed, Three Hours.

[*Six questions only to be attempted, and at least two must be taken from Part II.*]

PART I.

1. Describe the preparation of any three of the following substances:—Arsenic acid, bleaching powder, lithium carbonate, sodium bitartrate, sodium hypophosphite.

2. Starting from mercury, how could you obtain mercurous chloride, ammoniated mercury, red mercuric sulphide, and mercuric cyanide?

3. Enumerate the impurities which are liable to be present in refined sugar, and state how you would detect the presence of each. How could a specimen of pure sucrose be obtained?

4 What strontium compounds occur in nature, and how are the soluble strontium salts obtained from them? In what manufacturing process are strontium compounds employed, and for what purpose?

5. Describe how you would prepare potassium chromate, starting from a chromic salt such as chromic sulphate or chloride; also, how you would obtain such a chromic salt, starting from potassium chromate.

PART II.

6. Describe the preparation of milk-sugar and of maltose.
7. What is the action of potassium hydroxide upon—(*a*) benzaldehyde, (*b*) benzene sulphonic acid, (*c*) iodoform, (*d*) ethyl acetate, (*e*) acetamide? Illustrate the answers by means of equations.

8. How can naphthalene be obtained synthetically? What is the action of oxidising agents upon naphthalene?

9. How would you carry out the qualitative analysis of a mixture consisting of barium sulphate, silica, and alumina?

PHYSICS.

Time allowed, Three Hours.

[*Six questions only to be attempted.*]

1. By what physical method could it be shown that the vapour which rises from strongly heated sulphuric acid is not vapour of sulphuric acid, but a mixture of the vapours of sulphuric anhydride and water?

2. Describe fully the process of distillation as applied to the effective separation from each other of two mixed hydrocarbons whose boiling points do not differ by too small a temperature interval.

3. Define the terms boiling point, critical point, and vapour density.

4. What is the polariscope employed to measure? Mention any applications of the polariscope in making quantitative chemical determinations.

5. Describe any form of meter employed for ascertaining the amount of electrical energy supplied to consumers.

6. Mention any two cases in which the chemical effects of an electrical current are utilised in chemical industry.

The three Botany papers were given to different groups of candidates.

[†] The three Materia Medica papers were given to different groups of candidates.

7. What is meant by osmotic pressure? How is osmotic pressure measured?

8. In what respect does the vapour pressure of pure water differ from that of an aqueous solution of common salt, both liquids being at the same temperature? How could the difference be demonstrated?

BOTANY.

Time allowed, Two Hours.

1. Describe in detail the structure and mode of division of a typical vegetable cell. How would you distinguish between a living and a dead cell.

2. Give a full account of the structure and development of the flower and fruit of a Crucifer, such as the Wallflower, from its first appearance to the condition of the mature fruit.

3. Discuss fully the process of assimilation, or phytosynthesis, stating the conditions necessary for it.

PRACTICAL BOTANY.

Time allowed, One and a Half Hours.

1. Make preparations illustrating fully the structure of specimen A. Leave them for inspection. Make sketches from the preparations themselves, and give explanatory references.

2. Refer the plants B and C to their natural classifications, giving reasons for your decisions.

3 Describe in detail specimen D.

MATERIA MEDICA.

Time allowed, One Hour.

[*Two questions only to be attempted.*]

1. Gum Acacia.—State its chief geographical and botanical sources; the parts of the plant in which it is produced; and the way in which its formation is explained. Describe some of its distinctive characters, and how it can be distinguished from other gums—Indian, for example.

2. Salicin, Santonin.—How are these obtained? Describe their chemical nature and means of identification.

3. Thymol.—Describe its physical and chemical characteristics; state its source, how obtained, and its relationship to constituents of other essential oils.

PRACTICAL MATERIA MEDICA.

Time allowed, One and a Half Hours.

1. Name the two roots provided. Make transverse sections, draw, describe, and compare them, indicating chief points of difference.

2. Powder of official leaves. Identify it, and report on its purity.

PHARMACEUTICAL SOCIETY OF IRELAND.

Examination Results.

Pharmaceutical Licence Examinations.—The following have passed:—A. N. Yoxall, H. I. Gorman, B. Connolly, H. N. Forsythe, H. C. Thackeray, H. J. Owgan, H. Todd, H. I. Grubb, P. L. Doyle. Fourteen candidates were rejected.

Registered Druggist Examinations.—A. M. Gamble, T. Hanna, W. H. Howe, D. O. Perry, R. Verner, passed. Four Candidates were rejected.

Pharmaceutical Assistant Examination.—G. H. Batt, H. T. Grindley, J. Hunter, passed. One candidate was rejected.

Preliminary Examination.—The following have passed:—J. O'Neill, E. Collins, Kathleen M. Roberts, W. Kelly (T. J. O'Connor, I. Keogh, equal), J. J. Allen, W. S. Lawrie, H. G Varker, G. H. E. Banford, A. Mitchell, F. Maguire, G. B. Hoey, M. Stack (T. Kennedy, H. Kevin, equal). Fourteen candidates were rejected.

Lithium Salolophosphate; Salvosol - Lithium. — This compound, introduced into commerce under both the above names, is stated by Zechel to be a diuretic and antarthritic. It has also given good results in fevers, such as influenza. The dose for internal administration is 4 grains, three to four times a day. A 1:200 or 1:500 solution is also used as a disinfectant wash for the mouth.—*Pharm. Post*, **35**, 136.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

Spirit of Nitrous Ether.

At the Wolverhampton Police Court, on April 2, Edward Spicer, grocer, was charged with selling sweet spirit of nitre deficient in ethyl nitrite to the extent of 26 per cent. The bottle from which the sample analysed was taken was marked "Raybould, Whitehouse, and Co., manufacturing chemists, Dudley."—The Stipendiary, Mr. Neville, said defendant was liable to a penalty of £20 for selling the drug in a weak state. He thought it might be advisable to prevent people carrying on a business they knew nothing about. They not only, as in this case, defrauded the public, but might be the means of doing serious injury as well. This time he would only inflict a fine of 20s. and the costs.

Spirit of Nitrous Ether.

At Burnley, on April 9, a medical herbalist named William Mason was fined 10s., including costs, for selling spirit of nitrous ether which was deficient in ethyl nitrite to the extent of at least 95 per cent.—Defendant commented on the volatile nature of the drug, and said he had exercised every possible precaution in respect of it.

Pepper.

At the Stoke-on-Trent Police Court, on April 4, Thomas Bardsley, a drysalter, trading as Bardsley and Co., at Liverpool Road, Manchester, was charged with selling pepper containing 70 per cent. of rice flour.—The defendant admitted a technical offence, but said it was due to a mistake made by a clerk, who supplied seasoning instead of pepper. —The Stipendiary, Mr. Harold Wright, characterised it as a case of absolute fraud. The defendant had been stealing from his customers £3 out of every £5. He would have to pay £20 and costs, and if ever he came up before him again for such an offence a penalty more in keeping with its seriousness would be inflicted.

Camphorated Oil.

At the Birmingham Police Court, on April 11, Thomas Wakefield, chemist, Six Ways, Brookfields, was charged with selling camphorated oil deficient in camphor.—The defendant said he had made the oil himself, and the fact was that some of the camphor had not had time to dissolve at the time the sample was sold to the inspector.—Mr. Ladin (the prosecuting solicitor) admitted that the deficiency was not serious, and the Bench, being of opinion that there was no intention to defraud, only ordered the defendant to pay the costs of the summons.

Camphorated Oil.

In the Aberdeen Sheriff Court, on April 10, William Robertson, general merchant, Colpy, Culsalmond, was charged with selling camphorated oil which was not of proper strength. Robertson pleaded guilty, but the Procurator-Fiscal (Mr. Maclennan) said that it was the wholesale dealers who were really to blame, as they sold the oil to Robertson. Accused was a most respectable man. His Lordship said that apparently accused was not the person who was to blame, and he would make the fine just sufficient to cover the expenses of the action—namely, 22s.

ROYAL INSTITUTION.

At a meeting held on Friday, April 11, Lord Kelvin in the chair, a discourse was delivered by

Professor Dewar, who took for his subject

Problems of the Atmosphere.

The lecturer began by saying that we cannot overlook the potentialities of a fluid atmosphere. To scientific men the idea suggested itself that an easy means of separating, in a fairly pure condition, the main constituents of the atmosphere—viz., oxygen and nitrogen—would be thus afforded. If this could be done economically so as to render the oxygen available for metallurgical and other operations it would be a great advantage. Unfortunately, it was not found so easy in practice as might be supposed. Another possible method of effecting the separation depended on the fact that the nitrogen could be easily solidified, whilst the oxygen remained in the liquid state. The question then arose as to whether the semi-solid mixture could be effectively separated into its component parts. Interesting experiments were then shown demonstrating the difficulties which beset this operation. The mass could be manipulated *in vacuo* or in an atmosphere of hydrogen, and by means of centrifugal force the liquid and solid portions could be separated. But even by this method it was found that the liquid contained only about 50 to 60 per cent. of oxygen. Passing on to the application of these liquefied gases to the analysis of the atmosphere, Professor Dewar said that a sample of liquid air, containing all the various constituents, could be obtained. Then from this liquid, by careful fractionation, working at the lowest possible temperature and pressure, complete separation could be effected. By this means every fraction could be examined spectroscopically in a vacuum tube, and when a pure spectrum was obtained the tube could be sealed off. The next question discussed was the proportion of hydrogen present in the atmosphere. Professor Dewar paid a tribute to Gautier's careful investigations in that direction. Gautier found that methane was present in varying amounts, being present in the largest amount in Paris air, whilst only a trace was to be found in sea air. The amount of hydrogen was, however, remarkably constant, being present to the extent of about 20 volumes in 100,000 volumes of air. All these results had been obtained by combustion. Lord Rayleigh had repeated some of these experiments, using the same method as Gautier had done. But from the different results he obtained he was led to the conclusion that some error must have crept inadvertently into Gautier's work. In order to definitely settle this point, Professor Dewar devised an apparatus in which he was able to separate the uncondensable portions of the atmosphere, and by means of a glass float prevented them from redissolving in the liquid portion. In this way he had been able to measure with a fair amount of accuracy the uncondensed gases consisting of hydrogen and helium. These he found present to the extent of about one thirty-five thousandth. To test the accuracy of this method a known volume of hydrogen was mixed with liquid air, free from hydrogen, and then the mixture was submitted to examination in exactly the same way, and the whole of the hydrogen could be recovered and accurately measured. Casting about for an explanation of Gautier's error, the lecturer pointed out that in all the determinations made by Gautier a tin pipe had been used to supply the air to the combustion apparatus, and it was probable that minute traces of the meal had been carried over into the sulphuric acid employed for drying purposes, thus accounting for the larger amount of hydrogen found. The composition of the upper air was next dealt with. At present it had only been examined to a height of about nine miles, where the proportion of the constituents were practically the same as at the sea level. He thought that it would be possible in the future to obtain samples from a height of twenty miles. According to theory there should be a gradation in the proportion of the constituents as the height increased. It had been calculated that carbon dioxide would have disappeared at a height of eighteen miles, oxygen at thirty-seven, and nitrogen at sixty-two miles. There still remained the much-debated question as to whether there was a universal atmosphere, or whether our atmosphere reached its limit at a distance of some fifty miles; also whether space had any temperature. One view was upheld by one school, whilst another took the opposite view.

WESTERN CHEMISTS' ASSOCIATION (OF LONDON).

On Wednesday, April 16, the members and friends of this Association held a most enjoyable smoking concert at the Westbourne Restaurant, Craven Road, Paddington. The chair was taken by the President, Mr. W. F. Gulliver, and a good musical programme was gone through under the direction of Mr. Henry Prenton, assisted by Messrs. Elliston Webb, Frank Peskett, George Thatcher, and H. Gennari.

THREE TOWNS JUNIOR CHEMISTS' ASSOCIATION.

At a meeting, held on Wednesday, April 9, at Devonport Technical School, Mr. C. T. Weary in the chair,

Mr. J. Stuart Thompson gave a lecture on

Insectivorous Plants.

The lecturer introduced his subject by remarking that while the leaves of most plants were traps to catch sunbeams, the leaves of insectivorous plants were traps to capture small animals. He illustrated his lecture by an interesting series of lantern slides, showing the chief genera of insectivorous plants, namely: *Darlingtonia*, *Sarracenia*, *Nepenthes*, *Utricularia*, *Dionæa*, *Aldrovanda*, *Lathræa*, *Pinguicula*, and *Drosera*; and showed the means which the leaves of these plants possessed for capturing, digesting, and absorbing their animal prey. The subject was treated partly from a historical point of view, and the discovery of Venus' Fly Trap (*Dionæa*) by Ellis, a London merchant, in 1768, and how it was enthusiastically described by Linnæus as "Miraculum Naturæ," was alluded to by the lecturer. He referred to experiments showing that the liquids poured out by different genera of insectivorous plants possessed deliquescent, mucilaginous, antiseptic, anæsthetic, rennet-like, and peptic properties. The extreme sensitiveness of insectivorous plants to organic fluids was described in the "Sundew," in which plant Darwin had shown that a leaf immersed in an extremely dilute solution of ammonium phosphate, only sufficient to supply each gland on the leaf surface with 1/20,000,000th part of a grain, yet was strong enough to induce the inflection of the numerous tentacles on its surface. In conclusion, the lecturer referred to modern papers and criticisms which should tend to make students careful not to overrate the powers possessed by these insectivorous plants.

A discussion followed, in which Messrs. G. Breeze, H. Woods, and others took part. Votes of thanks were accorded to the lecturer, Chairman, and all who had assisted with the lantern.

NORTH STAFFORDSHIRE CHEMISTS' ASSOCIATION.

The annual meeting was held on Thursday, April 10, at the Alexandra Hotel, Stafford, Mr. J. Averill, J.P. (President), in the chair. The meetings of this Association are usually held in the northern part of the county, but in compliment to the President it was decided to hold the gathering at Stafford this year. There was a large attendance of members from the northern district, and several eminent pharmacists from various parts of the country accepted invitations. Amongst those present, in addition to the President, were:—Messrs. G. T. W. Newsholme (President of the Pharmaceutical Society of Great Britain), W. Gowen Cross, J.P. (Shrewsbury), and W. S. Glyn-Jones (London), members of the Council; Dr. Paul (Editor of the *Pharmaceutical Journal*), Messrs. J. J. Gibson (ex-President of the Wolverhampton Chemists' Association), T. C. Cornwell (Hanley), Vice-President of the North Staffordshire Chemists' Association; Edmund Jones (Hanley), Hon. Secretary; Weston Poole (Newcastle), Treasurer; F. H. Battley (London), W. Brinson (Liverpool), W. H. Gibson (Manchester), R. H. Merritt (Coventry), T. Bentley, A. F. Bottomley, F. C. Burrell, and W. E. Metcalfe (Hanley), F. Adams and W. B. Allison (Stoke-on-Trent), Councillor W. Marson, Messrs. F. Fowke and M. Averill (Stafford), P. Averill (Rugeley), C. H. Averill (Lichfield), Councillor C. J. Wain, Messrs. D. H. Oxen, and C. Morrison (Newcastle-under-Lyme), F. W. Wrench (Silverdale), S. C. McKee (Tunstall), G. R. Hankinson (Uttoxeter), T. H. Jenkins and F. Jacks (Stone), F. W. Goodman (Eccleshall). The Stafford guests also included Ald. F. Greatrex (Deputy Mayor), Ald. P. M. Bridgwood (chairman of the Public Health Committee of the Town Council), and Mr. H. H. Jordan (clerk to the borough magistrates).

At the opening of the business meeting several apologies for absence were read. The reports of the Secretary and Treasurer were received and considered satisfactory. The following officers were elected for the ensuing year:—President, Mr. J. Averill, J.P.; Vice-Presidents, Mr. T. C. Cornwell (Hanley) and Mr. W. Oldham, J.P. (Burslem); Hon. Secretary, Mr. Edmund Jones; Assistant Secretary, Mr. T. Bentley; Treasurer, Mr. Weston Poole. A resolution of condolence was passed with the widow and family of the late Mr. Wm. Martindale, a distinguished pharmacist, a Past-President of the Pharmaceutical Society, and a most zealous worker for the advancement of pharmacy.

Annual Dinner.

After the conclusion of business the members and guests dined together, the chair being taken by Mr. Averill. After the loyal toasts had been duly honoured, Mr. Edmund Jones proposed the toast of

The Pharmaceutical Society.

He observed that the zeal and enthusiasm which he felt for the Society was largely due to the example set him in the historic houses of Jacob Bell and William Allen, in which it was his privilege to work. He thanked Mr. Newsholme for honouring them with his presence, and to give those present an idea of what the Pharmaceutical Society existed for he quoted the words used by Mr. Northway Butt when presenting the President (Mr. Newsholme) with the badge and chain which he was wearing that night. Mr. Butt said: "Whenever that chain is worn in public I hope it will prove that the Pharmaceutical Society is not a nonentity, but that it is a society which has done work of the very best kind, and I hope whoever your successors may be they will remember that the Society exists for the protection of the public, and that whatever legislation is attempted the safety of the public will be the primary object." Mr. Jones pointed out that before the Society was started chemists were kept apart by petty jealousies, and friendly social gatherings were unheard of; but the Society had banded together with common motives and objects the best men in the craft for the protection of their mutual interests and for the bettering of the conditions of pharmacy throughout the country. They heard a lot of criticism about the Society, but he maintained that those who remained outside the Society had no right to grumble; let them first come in and then grumble. The Council was composed of men who were unselfish in their work, who fully knew the conditions under which pharmacy was practised in the present day, and thoroughly sympathised with the grievances members of the craft were suffering from. The names of Mr. Newsholme, Mr. Glyn-Jones, and Dr. Paul were coupled with the toast.

Mr. Newsholme, in responding, said he had watched the proceedings of their Society very carefully in the Journal, and he had also noted the criticisms, which showed that they took a large amount of interest in the craft. During the last few years he had observed with considerable pleasure the great increase in the number of provincial associations throughout the country, and he had noticed also with great gratification that many associations had referred to the North Staffordshire Association as an example to be followed, and as a sort of model on which to build their own. Referring to the admirable address delivered by their President some months ago, suggesting that the Society could do a great deal more good if it employed paid agents to go up and down the country and call upon those who were not members, pointing out the benefits of the Society, and what it could do if every member of the craft belonged to it. He was very glad to read that statement, but he did not see how it was possible for the Society, as a voluntary Society, to employ paid agents for that purpose, although it would be a useful thing. He would point out that there was already an organisation in existence by which such work could be done—viz., the Society's divisional secretaries. Although it was putting a great deal upon voluntary officers to ask them to point out the advantages of belonging to the Society and to interest their fellow members in the work of the Society, he believed that every loyal member would be glad to undertake that duty. Those who are not members are indebted to those who do belong to the Society, and they ought to think seriously about helping them to get legislation that would improve the position of every member of the craft. He agreed that men who did not belong to the Society had no right to criticise it. At the same time, he deplored the wretched apathy which had existed amongst them for so many years. Alluding to the work of the Council, Mr. Newsholme said its members devoted a great deal of time to the work and got no pay for it. Their sole object was to do their best for every other member of the Society. They had a right to expect that other chemists in the country should take the same interest in the work. There were fewer than 6,000 members belonging to the craft out of 16,000 on the Register, and they ought not to feel satisfied until that 6,000 was turned into 12,000. Of the remainder, there were many who were assistants, for whom there was, perhaps, less necessity to join, but the Society ought to have at its back the large majority of the chemists of the country who are engaged in business on their own account. Nobody required legislation more than chemists; but it was absolutely useless to go to Parliament without having the support of every member of the craft. They wanted to respect themselves, and each to carry on his business in a way that was perfectly honest and right. One saw in certain towns disgraceful exhibitions in shop windows of things which no respectable chemist ought to show. One also saw that there were a great number of proprietary articles—quack remedies of the very worst type—which they put their names to. Why they as educated and legally qualified men should sell remedies concocted by illiterate people he could not understand; they ought seriously to think about that matter. He knew the enormous difficulties they had to make a living, and that they were bound to sell things which they would like to put on one side; since there was no living in pure pharmacy, even if they had to do the work of dispensing for every medical man in the district, or confined themselves entirely to the sale of drugs, but they must remember that they were pharmacists first, and try to live up to the great principles set forth by his distinguished predecessors in the office of President. In conclusion, he thanked them personally, and on behalf of the Society, for the way in which they had received the toast.

Mr. GLYN-JONES, in responding, said he believed there would be a great development in the future in the direction of a closer connection between the local associations and the Pharmaceutical Society. He hoped the Society would be able to do something to promote the work of local associations. One thing to be thankful for was that the Society was represented in towns like Stafford by gentlemen such as Mr. Averill, but chemists ought to take a more active part in local affairs, as that would reflect upon the work of the Society by providing the political influence which it at present lacked. The apathy of the trade in regard to the Society was manifested in regard to kindred organisations, which had reason to complain of lack of support from the rank and file of the craft. He believed, however, that better times were coming; there seemed to be an awakening throughout the drug trade, for which local associations were largely to be credited. He hoped that the North Staffordshire Association, at the establishment of which he was present, would go on and prosper, because he knew that the Pharmaceutical Society could not but receive the greatest possible benefit from it and its work.

Dr. PAUL also responded. He said he had been reminded of the fact that on a former occasion he attended a meeting of that Association, and then saw a manifestation of cordiality and friendship amongst the chemists of the district, the continuance of which was evident that evening. He also recollected a very pleasant evening spent at Stoke, under the presidency of Mr. Averill. He thanked them very heartily for the renewal of the welcome given to him on that occasion.

Mr. CORNWELL, in proposing

THE PRESIDENT OF THE NORTH STAFFORDSHIRE CHEMISTS' ASSOCIATION,

expressed his appreciation of the able and devoted leadership of Mr. Averill, when Mr. Glyn-Jones was the chief mover in starting the Association and gave an address. Since their first meeting in 1896 they had made pretty fair progress; but the last session had been rather a poor one, as regards meetings. On one occasion Mr. Averill was not allowed to leave the house by the doctor's orders, and another was the annual dinner of the licensing justices at Stafford; but a record like his took a lot of beating, and he wished to show by his attendance that night his appreciation of the self-sacrifice and devotion of their noble President.

The PRESIDENT, in response, thanked those present for their hearty reception of the toast, and for having elected him to that honourable position from time to time during the past five or six years, as well as for honouring him by coming to Stafford to hold their annual dinner. He appreciated the compliment very highly. Their Association had now been in existence some five or six years, and it might claim to have done some good and beneficial work for the craft. Such associations could be of the greatest assistance to the Pharmaceutical Society, and, socially, of the greatest benefit to their members by bringing them together on various occasions to discuss matters connected with their business. He was pleased to see that such associations were increasing throughout the country, and he trusted that before long every town of sufficient size would have an association, and that smaller towns would group themselves together to form an Association. The Act of 1868 was passed because it was said to be expedient for the safety of the public, and before any chemist could commence business on his own account he had to pass a qualifying examination. He thought the time had come when chemists ought to have some protection as well; and it was to associations of that kind they must look for assistance to the Pharmaceutical Council in its endeavours to obtain such legislation as would properly protect the interests of the chemist, as was undoubtedly the intention of the Legislature and of the framers of the Act of 1868. He thought they should urge the Council to take decisive steps to find out exactly where the chemist and druggist stood at the present time. There were persons in the country who had never passed the statutory qualifying examination, but, nevertheless, they assumed the name and title of chemists. That appeared to him entirely wrong, and it ought to be remedied. Mr. Averill said he was one of those who thought that a division of the Minor Examination would be an advantage. He knew that was not the opinion held by many members of the Council, but he was pleased to see that latterly there had been a leaning towards his view. With regard to the contemplated Poisons Bill, they were glad to see that their esteemed friend Mr. Gowen Cross, was one of those who gave evidence before the committee which sat on that subject. No doubt Mr. Cross did his duty well and maintained that qualified chemists were quite able to deal with poisons. In regard to the present mode of representation there was a great division of opinion, but he believed in territorial representation. There might be some difficulty in mapping out the different territories, but the advantage to be gained would be enormous. For example, they would have Staffordshire combined, probably, with Shropshire and some other county. By that means their representative would be able to attend various associations throughout his district; he would have to give some account of his stewardship as a member of the Council, and members of the Society would be able to criticise his actions if requisite. In conclusion, Mr. Averill urged, as he had done on several occasions, the necessity of every chemist and druggist throughout the country becoming a member of the Pharmaceutical Society.

Mr. GOWEN CROSS next submitted the toast of

THE NORTH STAFFORDSHIRE CHEMISTS' ASSOCIATION,

remarking that he was present at its birth, and had watched its prosperous career with much pleasure. One of the chief functions a local association had to fulfil was choosing, in each district a divisional secretary, so that in a political crisis they might be ready to give effective expression to their opinions, without leaving opportunity for saying that the trade was not being properly represented. Those present would be pleased to know that, without exception, the Council of the Pharmaceutical Society was unanimous in the desire to divide the examinations; the difficulty was as to the proper way to do it. It was the fear that, in a hasty division of the examination, that cardinal fact should be lost sight of that he was in a minority of one when the Council decided to postpone the division of the examination for the present time. Apprentices made a great mistake when they entered pharmacy in devoting too much time to the purely scientific branch of their business. He believed there was in the Council of the Pharmaceutical Society a fair representation of every pharmaceutical interest at the present time, and when the county of Staffordshire and the rural portion of Warwickshire, with those of Shropshire and Montgomeryshire, chose to consult together, he would do his best in the future, as in the past, to serve them. In conclusion, he said that one of the greatest proofs of the success of the North Staffordshire Association was the fact that it had not been found necessary to change a single officer since its formation.

Mr. Weston Poole, in responding, appealed to the chemists of North Staffordshire to join the Association and make it a much stronger body than at present. He alluded to the movement in North Staffordshire with regard to higher education, and said he saw no reason why that Association should not be directly represented on the committee which had been formed to carry out the project. In that way they would be forwarding the interests of pharmaceutical education.

The remaining toast was "The Visitors," proposed in a felicitous speech by Councillor W. Marson, and ably responded to by Alderman Greatrex, Mr. J. F. Gibson, Mr. Jordan, and Alderman Bridgwood. During the evening songs were contributed, and Mr. Oxen gave one of the excellent recitations for which he has a wide celebrity.

CHEMISTS' ASSISTANTS' ASSOCIATION.

At a meeting of this Association, held on Thursday, April 10, the President, Mr. J. Wicliffe Peck, took the chair, and

Mr. E. A. Andrews, Ph.C., of St. Mary's Hospital, communicated some notes on the preparation of

Extractum Belladonnæ Liquidum.

In introducing the subject, he stated that when Cripps published his paper on belladonna preparations, it occurred to him that it would be a distinct advantage to have a liniment containing a definite amount of alkaloid; accordingly, he tried the process for the suggested liquid extract, and was quite satisfied with it. There was one point, however, in the process, now official, which he considered a defect—viz., the long time necessary to finish a batch of the preparation, it usually taking about a fortnight to complete a batch, while the shortest time was nine working days, exclusive of estimation. Many experiments had been made to produce a preparation agreeing with that made by the B.P. process, yet prepared in a shorter space of time. One process devised by Mr. R. W. Beck, and described in Remington's 'Practice of Pharmacy' (page 388), while not perhaps perfect, he thought went a long way to fulfil those conditions. That process he had found to work automatically and well, but as six bottles were required for each percolator, the apparatus took up a great deal of space; consequently, he had adopted an arrangement which did away with the intermediate bottles and produced the same results. Having got a method which did not require much attention steps were taken to see if the drug could be equally well exhausted in a shorter space of time, and after a number of experiments the following modification of the B.P. process was adopted:—

Take 40 oz. of menstruum, ordered in the B.P., and 2 lb. of belladonna root in No. 20 powder; moisten 8 oz. of the powder with 4 oz. of the menstruum, pack moderately tightly in a percolator and let stand from 5 p.m. till 9 o'clock the following morning, attach to the automatic supply, and allow the menstruum to drip on to the drug at such a rate that it is moistened right through, and a distinct stratum of fluid formed on top by 2 p.m.; attach a receiver, and let the rate of percolation be such that 4 oz. of percolate is collected by 5 p.m. Stop the flow of the menstruum. Use the 4 oz. of percolate to moisten a second 8 oz. of drug, pack in a percolator, attach to this a tube from the first percolator, and let stand till 9 o'clock next morning. Allow the menstruum to drip into first percolator, and the percolate from No. 1 to drip on to the drug in No. 2 at such a rate that it is moistened through and a stratum formed on top by 2 p.m. Attach a receiver and collect 4 oz. of percolate by 5 p.m. The same procedure is then followed with the third and fourth quantities of drug passing the percolate from No. 2 into a third percolator, and the percolate from No. 3 into a fourth percolator. At the end of the fourth day 4 oz. of strong percolate will have been collected, the remaining 8½ oz. being collected on the fifth day, allowing percolation to proceed at the same rate as on the preceding days. When the 40 oz. of menstruum has dripped into the first percolator it is raised, and when percolation ceases, or is so slow that there is danger that a distinct stratum of fluid will not be kept on No. 2, it is disconnected, the marc pressed, and the pressed fluid poured on No. 2. Percolators 2 and 3 are treated in the same manner.

After using this method for several years he had found it to answer admirably, the points in its favour being (1) that a batch of the liquid extract can be prepared in five days; (2) the periods of maceration are convenient; (3) a definite quantity of menstruum is used for the process; (4) the loss of spirit by evaporation during the process is reduced to a minimum; (5) the amount of alkaloids extracted is about the same as when strictly following the B.P. directions, but will vary slightly according to the condition of the drug; and (6) the same results are obtained when working on large or small quantities of the same batch of drug. The only disadvantage that he was aware of was that the process extracted a somewhat smaller percentage of total solids—a questionable objection, since the extractive might vary to the extent of two or three per cent., according to how the words "pack firmly" and "slow percolation" were construed; also because belladonna root itself differs in the amount of extractive it contains, some samples giving a liquid extract containing as low as 9 per cent. of solids, whilst others contained as high as 18 or 19 per cent. These points had, of course, been settled long ago, but for the purpose of the paper Mr. Andrews made a few more experiments. A sample of belladonna root was obtained which answered the description of a No. 20 powder. This sample was used for experiments Nos. 1 and 2. For experiments Nos. 3 and 4 belladonna root in stock was taken, consisting of some very coarse particles which could not possibly go through a No. 20 sieve, and a large proportion of very fine powder. The following table shows the results obtained:—

Strong Extract.			When Diluted to B.P. Strength.		
Experiment.	Percentage Alkaloid.	Average.	Sp. Gravity.	Percent. Extract.	Ratio Solids to Alkaloid.
1. Mod.	1·09 1·05	1·07	0·895	8·75	11·6 : 1
2. B.P.	1·03 1·05	1·04	0·898	9·35	12·4 : 1
3. Mod.	0·95 0·95	0·95	0·892	9·02	12·0 : 1
4. B.P.	0·98 0·98	0·98	0·904	10·64	14·1 : 1

A twelve pound batch of the same sample used for experiments 3 and 4 was worked up, using methylated spirit in the place of rectified. When the strong extract was determined it contained 0·97 per cent. of alkaloid and 11·77 per cent. of solids; ratio of solids to alkaloids, 12·1:1.

The Pharmacopœia directs that the gravimetric method of determination shall be checked by a volumetric one, but, Mr. Andrews stated, in his hands the latter had not always been a success, and from various experiments he had doubts as to its value. It was of use to detect glaring inaccuracies, but no more. Therefore, he preferred two gravimetric determinations, and since Wilson read a paper on the subject (see *P.J.* [4], **7**, 3) he had used a slight modification of the B.P. method.

Having described several other experiments which bore out the results given in the table, the author described two experiments made with the object of ascertaining how the finished product was affected when the weak percolate and pressings from one batch was used to start a later batch, and he had come to the conclusion that although a batch of the drug might be started with a menstruum containing a high ratio of solids, the alkaloids are extracted so much quicker that the ratio of solids to alkaloids in the finished product are actually lower, and he was of opinion that there comes a point when the ratio becomes constant for the particular sample of drug being used, supposing, of course, that the strength of the spirit is kept up.

The author then went on to point out the necessity for an official definition of the term No. 20 powder, inasmuch as the wholesale houses were by no means unanimous as to what constitutes a certain size powder, this being particularly noticeable in the case of belladonna. But he would rather have a badly powdered sample that represented the entire root than one that was more uniform, but had simply been prepared by sifting out the finer particles. In this connection attention was directed to a paper published by Mr. R. H. Parker (see *P.J.* [4], **3**, 96), in which he showed that the colour and the alkaloidal value of tinctures varied according to the degree of fineness to which the powdered drug was sifted. That was borne out by his (the author's) own experience, and he was strongly of opinion that the B.P. authorities would do well to extend the description of powdered drugs and set a fair standard, for if crude drugs were not fairly uniform, however carefully preparations were made, they would be bound to differ.

At the conclusion of the paper several members expressed their thanks to Mr. Andrews for his interesting remarks, and concurred with his opinion as to the necessity for a definition of a No. 20 powder. On the motion of the President, a vote of thanks was accorded to the author, and the meeting terminated.

GRIMSBY AND DISTRICT CHEMISTS' AND DRUGGISTS' ASSOCIATION.

The annual meeting and dinner of this Association were held at the Oberon Hotel on Thursday, April 10, the President (Mr. R. Cook, J.P.), in the chair.

The annual report presented by the Secretary stated that the last annual meeting was a thoroughly representative one, and expressed a hope that the past interest in the Association will increase until all the chemists in Grimsby and district feel it their duty to become members for their mutual interest and benefit. The balance-sheet showed a balance in hand of £4 11s. 6d., being a decrease on last year owing to extra expense incurred in printing, etc. At the Conference of the Eastern Counties Chemists held at Nottingham last April, the Association sent Messrs. Sneath and Dewing as delegates, and the Association was sorry that the impression received by the delegates was not of a satisfactory nature. In reply to a Federation circular the Committee had strongly expressed the opinion that all weed-killers containing scheduled poisons should be sold only by qualified chemists for the safety of the public generally. It had also been suggested that wherever it was possible for higher grade schools or technical instruction committees to arrange suitable classes for the education of assistants and apprentices, such classes should be promoted and students encouraged to apprentice themselves in such places. The Treasurer then presented his statement of audited accounts. The reports of the Secretary and Treasurer were approved and passed.

Election of Officers.

Mr. R. Cook, J.P., was re-elected President, Mr. C. Willson was re-elected Vice-President, and Mr. J. Hawdon was re-elected Treasurer. Mr. Sneath having resigned the position of Secretary, and Mr. Dewing that of Assistant-Secretary, Mr. Herbert W. Colley was invited to undertake the duties of Secretary for the coming year, and after a little discussion Mr. Colley consented to undertake that position on the understanding that he would be helped by the Treasurer in the collection of subscriptions, payment of accounts, etc.

Mr. T. Palmer, J.P., and Messrs. Carter-White, Dewing, North, Sneath, with the *ex-officio* officers, were elected as the Council for the ensuing year. Messrs. Hearne and Moore were re-elected Auditors.

Mr. H. W. Colley opened a discussion on the question of the general meetings of the Association, and dealing with the question of making the meetings more attractive, which was eventually referred to the Committee with instructions to report at the next general meeting.

Mr. C. Willson gave notice that it was his intention to move an alteration in the wording of Rule 4 at the next meeting. A letter from Mr. F. Helsby resigning his membership of the Association was read. The meeting then adjourned to dinner, at which nineteen sat down.

Annual Dinner.

The President occupied the chair, and after dinner proposed in felicitous terms the loyal toasts, making a grateful reference to the noble work His Majesty the King had done for the hospitals.

Mr. Hawdon proposed the toast of the

Grimsby and District Chemists' and Druggists' Association.

He said that he would like to see the Association a power for more good than it was. When first formed, it was with the idea of getting the members of their profession together. Though they had not fully succeeded he hoped they would continue to strive until they achieved their object. There had been some talk of giving up their annual dinner, but he for one would object to that, for to reach an Englishman's heart they must get at his stomach. He wished the Association every success, and coupled with the toast the names of the retiring Secretaries.

Mr. Sneath said, in responding, that it had been his privilege and honour to be connected with the Association since its formation in 1894. When he first came to Grimsby he was a stranger, but he was not a stranger for long. It had been said that there was a lot of jealousy among the chemists of the town, but he most emphatically denied that. They had not always agreed upon all points, but they had some most enjoyable meetings, and looking back on his connection with the Association, he could recall some very pleasant gatherings. He was sorry to be obliged to resign his position as "Hon. Sec." owing to other duties, and also because he thought the honours should go round.

Mr. Dewing endorsed the sentiments of the previous speaker, and wished they could get all the chemists of the town to join the Association. He was very pleased to see strangers with them that evening, and hoped they would join before they left the room. There was wisdom in numbers, and if they were all combined they could do great good to themselves and to the public in general. He was sure they had left their duties in the hands of a very capable successor.

Mr. G. Cook gave the toast of

The President and Members of the Council.

There were no words he could say in too high praise of the President, who had not only the interest of their Association at heart, but the interest of chemists throughout the kingdom. Their Vice-President, Mr. Cor Willson, they had known and respected for many years; he was one of the oldest chemists in the town. He had given them much good advice, and many learned dissertations. The Council had done much for the success of the Association, and under such able management he hoped it would increase in utility.

The President, in reply, said that after the kind remarks of the proposer of the toast he felt very embarrassed. During thirty-one years of pharmaceutical life he felt the greatest pleasure in assisting his brother pharmacists. Anything he could do for the Association it was his wish to do.

Mr. C. Willson said they had worked hard to make the Association a success. It was inaugurated in the cholera year, and since that time they had done everything in their power to promote the interests of the chemists of the town, and also to ensure the safety of the public, to improve legislation, and to protect themselves from the inroads of outside piracy.

Mr. S. J. North, speaking on behalf of the Council, said a deal had been heard of outside criticism which was scarcely right, for they could not expect to win the battle unless they had the support of the whole body of chemists. If the Council were only better supported it would be able to do much more. Dr. John Attfield once had stated that "It is the pharmacists and druggists themselves who retard their own advancement by their want of unity, their consequent want of power and their resulting timidity."

Mr. C. Willson proposed the "Town and Trade of Grimsby," to which Mr. Councillor Carter-White responded.

Mr. H. W. Colley, in proposing

The Pharmaceutical Society,

said that while all chemists look to the Pharmaceutical Society and know it is the only body that can do anything for the chemist in the way of bettering his position by legislation, etc., many of them instead of joining the Society were content to stand outside, to criticise and abuse it. Mr. Colley wished to introduce to the Association the new member of the Pharmaceutical Council, Mr. R. A. Robinson, who had been co-opted in place of the late Mr. Martindale. He was quite against co-opting, and thought it would have been much better for the members to have had the election of eight councillors next month, the eighth man to have taken Mr. Martindale's place. However, the Council had elected his successor, and he thought that they had chosen the finest man that they possibly could have done. As Mr. Robinson had been elected without giving the members an opportunity of reading his election address, he had great pleasure in introducing Mr. Robinson as a man in whose administrative abilities they might have great confidence. He had for some years been assistant to Mr. Robinson both at his West-End business and in his business at Tunbridge Wells, and he could recommend Mr. Robinson (the principal of Malden and Co., Brompton Road) as a man who understood the needs of both town and country chemists. Though the proprietor of a flourishing London business he was a man who had had to fight to keep his trade; he had had Harrod's Stores grow up on one side of him, while Lewis and Burrows were his opponents on the other side, while at the Wells he also had the stores to combat. Mr. Robinson had taken both a delight in, and a great share of, public duties, as an Alderman of the Borough of Kensington, as a prominent member of the L.C.C., and as a magistrate; he held various other public offices, and had a large grasp of public business. He hoped that Mr. Robinson would bring before the Council that part of the Pharmacy Act which states "That from and after December 31, 1868, any person who shall, etc., exhibit the name of chemist, etc., not being a duly qualified chemist, etc., shall be liable to pay a penalty, etc.," and that he would urge the Council to administer the Act in the interests of chemists who had enriched the Pharmaceutical Society with examination fees, subscriptions, etc. He considered it disgraceful that Boots, Ltd., had been allowed to usurp the title of chemists for so many years in defiance of an Act of Parliament.

The President in responding, said he had been Local Secretary for many years, and he wanted to draw their attention to the Benevolent Fund, which was doing good to all chemists. He thought all in that room could afford five shillings a year towards it.

Mr. T. C. Palmer, J.P., gave

The Visitors,

and hoped that every chemist in that district would become a member of the Association.

Mr. M. Cook, J.P., responded, and said it was the first time that he had had the pleasure of being with them, although not the first time he had been invited. He had always received the greatest courtesy and kindness from all chemists in the town. He should like to see greater unanimity among the trade with regard to the closing of shops, etc.

Mr. Faithful, of Messrs. Allen and Hanburys, also suitably responded.

Mr. Ball gave "The Ladies," to which Mr. Johnson responded.

During the course of the evening songs were given by Messrs. Palmer, North, Carter-White, Cook, etc., a most enjoyable evening being spent.

BRISTOL PHARMACEUTICAL ASSOCIATION.

At a meeting held on Wednesday, April 9, at the Royal Hotel, Bristol, the President (Mr. E. F. Young) in the chair, Mr. G. T. Turner (Vice-President) read the following paper on

The Minor Examination.

It has long been felt amongst all ranks of pharmacists that the Minor Examination, as at present conducted, leaves much to be desired. Many suggestions and schemes have been propounded to remedy this, but so far the chief alteration that has been made has been to increase its stringency. It is very hard on a student who presents himself for examination and passes in most subjects, but fails in perhaps one or two, that he should be obliged to go through the whole ordeal again. Many a man who has passed the first time in some subjects and failed in another, on presenting himself the second time has failed in the very subject in which he scored most marks at first. So common is this that the unfairness of the examination is patent to all. The medical student is examined in two, or at most three subjects at a time, and if he passes in either of these, he passes it for once and all. He is only re-examined on the subjects in which he has previously failed. It thus happens that some Minor Examination candidates are involved in greater expenditure and take a longer time to get qualified than they probably would have in getting a medical qualification. In my opinion no curriculum should be enforced on any student who was apprenticed before January, 1901. The Minor Examination should be divided into three sections, each of which should be held on a separate day, and each of which may be passed once only by the student. The three sections should be: — (1) Practical; (2) Scientific; and (3) Technical subjects. The three sectional examinations to be held on consecutive days, so that the interval which now obtains between the first and second day's examination may be abolished. There is a strong feeling on this question throughout the country, and I consider that a canvass should be made of all members and associates of the Pharmaceutical Society, and let the decision of the majority (and not that of the Council or the Examination Committee) determine the point. Before a curriculum is put into force better provision should be made in large provincial centres throughout the country for the education and training of pharmaceutical students. I strongly commend to all the members of this and all kindred associations the perusal and consideration of a very able paper on "Provincial Schools of Pharmacy and Hints for their Establishment and Support," by Mr. James Paterson, which has been reprinted by the Federation of Local Pharmaceutical Associations, and from whose secretary copies may be obtained. I would offer as a suggestion that, whilst the Federation of Local Associations is doing good work, the objects of that Federation would be greatly furthered by putting the British Pharmaceutical Conference on a broader basis, and in addition to the reading of papers on scientific and other subjects bearing on pharmacy, equal time and importance should be given to the consideration and discussion of questions vital to our own interests whether parliamentary, educational, or commercial. Greater interest, however, must be taken by the individual pharmacist in supporting the local association of which he is a member, or of which he ought to be a member; divisional conferences of local associations should be held, and a general, larger, and broader British Pharmaceutical Conference arranged before we can hope to advance the interests and welfare of our ranks.

At the conclusion of the paper, Mr. Turner was warmly thanked by the President, and an interesting discussion followed, in which Messrs. Young, Plumley, Taylor, Berry, Boorne, and others took part. There was a general consensus of opinion that the Minor Examination should be divided into three sections as suggested in the paper, and that candidates should not be examined a second time in any section after once having been successful in that division of the subjects. After the business meeting about thirty members and friends sat down to a capital supper provided in another room of the hotel, and after supper a programme of vocal and instrumental music was rendered by the following gentlemen:—Messrs. F. H. Blissett, H. E. Boorne, A. W. Cox, A. B. Francis, H. C. Isaac, C. A. Stokes, G. T. Turner, T. Walker, T. Wilkes, and E. F. Young, which was much appreciated by all present. Mr. E. W. Hill ably undertook the arduous duties of accompanist, for which a special vote of thanks were accorded to him. A verse of the National Anthem brought to a close a very enjoyable evening's entertainment.

DEWSBURY CHEMISTS' ASSOCIATION.

At a meeting held on Monday, April 14, Mr. Robert Gledhill presiding, a vote of condolence was passed with Mr. J. Walker (Cleckheaton), a member of the Association, on the death of his mother.

Mr. G. F. Merson, Secretary of the Federation of Local Associations, wrote stating that he had noticed an extraordinary report in the trade journals of the last meeting of the Dewsbury Association. He was doubtful whether to take Mr. Broadhead's remarks seriously. Surely he could not mean what he said. He (Mr. Merson) hoped some error had occurred in the reports. The Federation was not by any means what they should like it to be, but the Executive were in a difficult position. They had no right to decide arbitrarily what subjects should be put forward for discussion. They were simply the mouthpiece of the various affiliated bodies. Could not the Dewsbury Association give them some assistance instead of throwing them over? He would be pleased to welcome any suggestions with a view to extending the usefulness of the organisation. There was a further letter acknowledging receipt of the subscription, and expressing a hope that the Dewsbury Association would be represented at the Dundee Conference. No action was taken in the matter.

In reply to Mr. W. Stead, it was stated that no communication had been received from Bradford in relation to a resolution they were reported to have passed on the question of the proposed federation of associations in the West Riding.

Alluding to questions which were likely to come up for discussion during the coming year, the President said perhaps the first was that of an enforced curriculum and the division of the Minor Examination. A debate had recently taken place in the Pharmaceutical Council, and an amendment was passed declaring that it was not advisable to have a division of the Minor until they had a compulsory curriculum. He did not see why that amendment should be adopted. The Minor could very well have been divided without a compulsory curriculum. The remuneration they received at present did not warrant any increased education demands, and before any further education was demanded their rights ought to be secured. What were the things secured to them at present? If they depended on the Schedule of Poisons they would starve. If they were to have a more severe curriculum they ought to have the exclusive right to deal in Pharmacopœia preparations. As to the Minor Examination, it should be divided. Mr. Gledhill went on to say they ought to take great interest in the election of members of the Council. Some people thought it was brilliant to go for the Council, but they should remember that the Council was composed of men elected by themselves. If they did not exercise the franchise they ought not to grumble. He did not find as much fault with the Council as most people did. It was often blamed for keeping quiet, but on many occasions its silence was a sign of soundness. The Society was not backed up as it ought to be. The open shops question in Scotland was recently tackled, but he had not heard of any association thanking the Society for what had been accomplished. The report of the Poisons Committee would be brought before them. They might, perhaps, be required to renounce their right to some articles which now came under the Pharmacy Act. He would resist that, but if they had to renounce one article they ought to secure two or three others to take its place by an extension of the schedule that would improve their standing and benefit them financially. Prescription dispensing, so far as chemists were concerned, had become almost obsolete. A person called upon to dispense a prescription, whether in a shop, an infirmary, or in a surgery, should be qualified under the Pharmacy Act. He would also like to see the proposal of Mr. Stead (the ex-President) carried out, that was, the formation of a federation of West Riding associations.

It was decided to contribute £1 1s. to the Martindale Memorial Fund, and to recommend members to vote for the following candidates for seats on the Council:—Messrs. J. Harrison, A. S. Campkin, W. S. Glyn-Jones, C. E. Pickering, R. Young, Harrington, and M. Carteighe.

BLACKPOOL AND FYLDE CHEMISTS' ASSOCIATION.

A meeting was held on Tuesday, April 8, at the Palatine Hotel, amongst those present being Messrs. Ashton, Johnson, Turver, Richardson, Buckley, Keeley, Greenwood, Mayson, Bailey, and Sankey (Hon. Secretary). Mr. Turver, as senior Vice-President, was voted to the chair, in the absence of the President.

After the passing of the minutes, discussion was opened by the Chairman upon the advisability of continuing the Wednesday closing for two weeks longer. Opinions were expressed much in favour, and it was decided to continue the closing.

The Chairman introduced the Benevolent Fund subscription and dwelt upon the necessity of all chemists subscribing, whether in business or not. We never knew how fortune smiled upon us, yet hoped our lot would never fall to have to seek help from the good cause.

Mr. Richardson referred to the great number of calls he had on his generosity. He had sent his subscription, and thought all members would do likewise.

Mr. Ashton was under the impression Blackpool chemists subscribed liberally to the Fund.

Mr. Sankey said the majority of local chemists subscribed, but, unfortunately, in the list published previous years there were no guinea subscribers. The present idea was to invite qualified chemists, at present not members, to subscribe either the minimum or as much more as their generosity permitted to this most worthy object.

On the proposition of Mr. Richardson, seconded by Mr. Buckley, it was resolved:—

"That circulars be either obtained from headquarters or drafted by the Divisional Secretary and Local Secretary, and one sent to each registered chemist in Blackpool Parliamentary division, demonstrating the importance of all registered chemists interesting themselves by subscribing to the Benevolent Fund."

Mr. **Buckley** had promised to read a paper on patents, but had not had time to prepare same. After a general discussion upon the unsatisfactory goods unprotected patents are at present to distribute, Mr. Buckley's paper was deferred to the next meeting.

EXETER ASSOCIATION OF CHEMISTS AND DRUGGISTS.

The annual meeting of this Association was held on Tuesday, April 8, when the chair was taken by the **President**, Mr. E. Lemmon.

The **Hon. Secretary** (Mr. H. W. Gadd) reported that the meetings held during the year had been attended by the faithful few and criticised by those who never come. The most important was on May 19, when a deputation from the Pharmaceutical Council attended, and explained the provisions of the proposed Pharmacy Bill. There was a representative attendance from various parts of the county. An interesting and useful discussion followed, and subsequently those present had tea together, at which they were joined by the Mayor and Sheriff of Exeter. A new scheme had been arranged for Sunday duty, the various members taking it in turn to attend to emergency cases. The Association was represented at the meetings of the British Pharmaceutical Conference and the Federation of Local Associations held at Dublin in July. The financial statement was presented by Mr. Lake, and adopted.

Election of Officers.

On the motion of the **Chairman**, seconded by Mr. J. H. **Lake**, Mr. G. Stocker was elected President for the ensuing year.

On the motion of Mr. **Milton**, seconded by Mr. **Lemmon**, Messrs. H. Wippell Gadd and J. W. Lake were re-elected Hon. Secretary and Hon. Treasurer respectively. The Committee was re-elected, with the addition of Mr. Harris.

Pharmaceutical Education.

Mr. **Gadd** explained Mr. Paterson's scheme for subsidising pharmaceutical education, and said the Association was asked by the Secretary of the Federation to pass a resolution on the subject, as other associations had done.

Mr. J. **Hinton Lake** moved a resolution to the effect that the Association approved generally of the scheme which Mr. Paterson proposed, also pointing out that it had already broadly been adopted in the city of Exeter for the past six years at least. Although, unfortunately, they had not got many pupils, Exeter was far in advance of many other centres in having adopted the principle of pharmaceutical education. Mr. D. **Reid** seconded the resolution, which was carried unanimously.

Pharmaceutical Apprenticeship.

Mr. **Milton** next opened a discussion on pharmaceutical apprenticeship by expressing the opinion that the Pharmaceutical Society should do more to protect the interests of chemists and druggists.

Mr. **Lemmon** agreed with Mr. Milton, and said that the Pharmaceutical Society could do more to protect chemists' interests by a stricter enforcement of the pharmacy law. It seemed to him that the Pharmaceutical Council should see that everyone who performed the act of a qualified chemist was a qualified chemist. If the Pharmacy Act was strictly enforced in all big stores and cutting places it would very soon stop a great deal of mischief. He did not see how it was possible for those places to pay if they had legally qualified pharmacists to conduct the pharmacy branches of the business. How they paid was by having one man who covered the whole, and as long as that continued so long would chemists be tormented by people selling things at ruinous rates and dispensing at no profit at all.

Mr. J. **Hinton Lake** pointed out that a good deal depended on the members of local associations giving information themselves to the Pharmaceutical Society or to the local secretary of any cases of infringement of the Pharmacy Act. The Pharmaceutical Society could not be cognisant of all breaches of discipline that were constantly being carried on in various parts of the country. They must depend to a great extent on information being supplied to them.

Mr. **Tickle** said the question was how to deal with the dearth of apprentices. Speaking generally, he was in favour of a very liberal and broad education for everybody, not only for chemists and druggists. Both the success of the individual and the success of the country altogether depended on every individual being equipped with a fairly good scholastic education, as well as a thorough education in the branches that applied to his particular trade or profession. It was just possible there was now a reaction of a condition of things that had been taking place for ten or more years previous to the last five, when people were rushing as apprentices to chemists and druggists. There was a period when the business was somewhat more prosperous than at present, broadly speaking. There were, on the face of it, many inducements to enter the profession of chemist and druggist, and he thought the business had been overcrowded.

Mr. **Vinden** said that the law of supply and demand would regulate that. A great objection which young fellows had was to the long hours. The hours of business were too long, and the remuneration when finally they got into business was not sufficient for the time spent in getting through the examinations.

Mr. **Reid** said the apprenticeship question had been passing through a transition stage. He was perfectly of opinion that their old Preliminary Examination was too low a standard of education for them to require of anyone. It was out of proportion to their qualifying examination. The consequence was they got in a certain number of lads who managed to pass the Preliminary Examination, but who had little hope of ever being qualified men. There was no doubt the Preliminary Examination did want revising. The raising of the standard was a step in the right direction; it raised pharmacy out of the ranks of the business into the ranks of the profession, and he believed in a few years' time they would be able to attract a better stamp of lad, and that apprentices would be more plentiful when the prospects were better.

Mr. **Stocker** said there was the difficulty of getting apprentices, and the difficulty of dealing with them when they had them. One of the chief difficulties in getting apprentices was that when an apprentice was being engaged too much was held out before him as to what his occupation would be.

Mr. J. W. **Lake** said students who intended to enter for the Minor ought to be able to go in for a sort of second preliminary at the end of the second year of apprenticeship, an examination which should cover such things as the elementary classes at the local college undertook now. That would enable apprentices to retain an interest in the business and in his studies.

Mr. H. **Wippell Gadd** said he understood the view of Mr. Clayden, the principal of the local college, was that the present stringent examination made it absolutely necessary nowadays that throughout the apprenticeship some definite course of instruction should be carried through. It was a very important question which appealed to educationalists, and Mr. Clayden was anxious to know how far they would support him by giving apprentices facilities to attend any course he might be able to arrange.

After further conversation, on the motion of Mr. **Lemmon**, seconded by Mr. **Milton**, the discussion was adjourned to a time which would be convenient for Mr. Clayden to attend and explain his views.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

ELECTROLYTIC PRODUCTION OF BARIUM SALTS.

C. B. Jacobs has described a new application of the electric furnace, which may prove to be of great practical importance, before the New York section of the Society of Chemical Industry. Barytes, the natural barium sulphate, is usually converted into other barium compounds by treating it with coal or coke in a reverberatory furnace and then working up the crude barium sulphide thus obtained; but it has been found that when barium sulphate and sulphide are heated together in suitable proportions, at the temperature of the electric furnace, the sulphur is completely eliminated as sulphur dioxide and barium oxide remains, the conversion being so complete that only 2 to 3 per cent. of barytes remains unacted upon, as against 25 to 45 per cent. by the older process. By lixiviating with water and crystallising out, almost pure barium hydroxide is obtained, and from that compound all the barium salts are readily obtained. The electrical energy required for the process is got from the Niagara Falls, and the plant in use at the present time is turning out sixty tons of barium hydroxide per day. The compound is largely used in the tanning industry, the white pigment and dry colour trades, the purification of water for industrial purposes, and general manufacturing chemistry, the largest consumption being the beet sugar industry, for the recovery of the sugar remaining uncrystallised in the molasses. Barium hydroxide is also an ideal substance for the softening of water for boiler purposes, and its general introduction in place of the methods at present in use is said to be only a question of price.—*Nature*, **65**, 572.

DEODORISED OPIUM AND PREPARATIONS.

A. E. Ebert points out that the use of ether in preparing deodorised tincture of opium, U.S.P., involves removal of the narcotine present. To avoid that difficulty, petroleum ether has been recommended as a substitute for ethylic ether, but Ebert finds a high-grade gasoline preferable, as it does not leave any disagreeable odour in the finished product. Moist opium is sliced and exhausted by maceration with hot water, followed by maceration with diluted acetic acid. The acetic extract having been evaporated to dryness and the residue added to the concentrated aqueous extracts, the mixture is further concentrated and an equal volume of gasoline added. After standing for twelve hours, the gasoline is separated and the aqueous liquid filtered and further evaporated. The extract is then assayed, and the strength of the liquid adjusted so that it shall contain twenty-four grains of opium in each fluid ounce. Four fluid parts of this concentrated liquid extract correspond to one part by weight of the opium used, and the preparation retains all the narcotine in solution. It can be used for preparing laudanum, paregoric, and other liquid preparations of opium, but Ebert prefers, as an official preparation, a deodorised granular opium, prepared by reducing the drug to No. 10 to 20 powder, treating it with gasoline until no more colour is removed, and then drying. The gasoline extracts from 2 to 3 per cent. of caoutchouc, wax, resin, oily matter, etc., but the purified drug retains the strong, peculiar odour characteristic of natural opium. Ebert is very insistent about the undesirability of removing narcotine from opium or its preparations, and recommends that it should be made official as a medicinal agent, to be added when morphine is prescribed, in order to counteract the depressing effects of the latter base.—*Am. Journ. Pharm.*, **74**, 157.

LIQUID SOAP FOR SURGICAL USE.

M. I. Wilbert publishes the following formula for a liquid soap for surgical purposes:—Cottonseed oil, 300; alcohol, 300; water, 325; sodium hydroxide, 45; potassium carbonate, 10; ether, 15; carbolic acid, 25. The oil is placed in a bottle of suitable size, together with 100 parts of water, 200 of alcohol, and the sodium hydroxide. The bottle is then shaken until saponification is effected, after which the remaining alcohol is added. Next, the potassium carbonate is dissolved in the rest of the water, and added to the contents of the bottle, the carbolic acid and ether being added last, and the bottle again shaken well. The soap must be kept in well-corked vials, in order to prevent evaporation of alcohol, and it is also advisable to maintain it at a temperature not below 10° or 12° C., so as to prevent solidification.—*Amer. Journ. Pharm.*, **74**, 173.

CLEISTOGAMIC FLOWERS.

Dr. C. H. Shaw discusses, in the *Publications of the University of Pennsylvania*, the formation of cleistogamic flowers, a phenomenon in regard to which various explanations have been put forward, though no simple explanation has been offered which would cover the phenomenon in all cases. In fact, it is thought to be probable that the cleistogamic flowers are formed in response to different stimuli, or for different purposes. The examples selected for examination by Dr. Shaw were two American species of *Polygala*, one of which, *Polygala polygama*, produces both aërial and subterranean forms. The latter occur in early summer at the same time as the normal flowers, while the former are found later, on shoots which may have borne open flowers and, at that time, develop a geotropic tendency. The morphological differentiation of the aërial cleistogamic flowers is intermediate between that of the other two varieties. The formation of the cleistogamic flowers seems to be correlated with the economic and rapid production of the seed, for the normal flowers fail to a great extent to set seed, and require a longer time to mature it.—*Nature*, **65**, 574.

EXTRACTION OF NUX VOMICA.

F. A. Sieker points out that the U.S.P. directs extract of nux vomica to be made by first preparing a liquid extract, from which the oil must be removed by treatment with ether. The U.S.P. fluid extract, however, is prepared by exhausting the powdered drug with a mixture of alcohol, water, and acetic acid, no directions being given for depriving the resulting product of oil, and, after standing for some time, the fluid extract becomes turbid, owing to the separation of a little oil. Some time ago Sieker published a method for separating the oil from powdered extract of nux vomica by treatment with paraffin, and he has now applied the same method to the fluid extract. Thus, the powdered nux vomica is exhausted with the menstruum already mentioned, the alcohol recovered by distillation, and the residue diluted with water. The paraffin is then added and the mixture heated to 70° to 80° C., being also briskly stirred for half-an-hour. After the mixture has stood for 24 hours to cool, the paraffin, which has risen to the top of the liquid and congealed, is removed, and the operation repeated with more paraffin. The whole of the separated paraffin, etc., is then warmed, stirred with water acidulated with acetic acid, and set aside to cool, the liquid being subsequently separated and added to the more concentrated solution of extract. The mixed solutions are then strained through thin, closely woven muslin and the strained liquid is evaporated and standardised. After settling, a perfectly clear fluid extract remains and a tincture made from it, though it becomes turbid soon after preparation, deposits a little sediment and remains perfectly bright after standing for a few days. A fluid extract prepared as described yielded 1 per cent. of fat to petroleum ether and, subsequently, 1 per cent. of resin to ether.—*Am. Journ. Pharm.*, **74**, 175.

NOTES ON CANNABIS INDICA.

BY E. M. HOLMES, F.L.S.

On several occasions during the last year or two I have received enquiries concerning the bad quality of the Indian hemp in English commerce, and the cause of the small percentage of resinous extract that it yields. The recent communications in the *Pharmaceutical Journal* by Mr. G. F. Merson and Mr. Maben have re-directed my attention to the drug, and it seems desirable to make known such information as is at present obtainable. Surgeon-Major Dr. D. Prain, F.R.S.E., Director of the Botanical Survey of India, who has paid considerable attention to the subject of Indian hemp, has kindly replied to my enquiries as to the cause of the bad quality of the drug, and the possibility of obtaining it of better quality. He says:—

> There is, in theory, only one quality of Ganjah. In practice, however, there are many sorts, depending on the place where the drug is produced and the way in which the plant is grown, and its age. Bengal Ganjah is better than Bombay Guaza (the names being really the same, for Guaza is only the Portuguese attempt to pronounce the Indian word), but the superiority is entirely due to the greater care of the Bengal cultivators, who carefully eradicate all the male plants from their fields. This prevents fertilisation of the female plant, and the production of the resin is thereby greatly promoted. Moreover Ganjah does not keep. The deterioration, physiologically, is so great that Ganjah one year old has not more than one-fourth the potency of fresh Ganjah, and Ganjah two years old is practically inert. This fact is quite well understood among the traders in India as well as by the Government. One result of this fact is that as soon as a dealer's stock is two years old, he has to burn the whole of it in the presence of Excise officials. The reasons for doing this are quite sound, and are concerned with the prevention of smuggling by the substitution of good for inert Ganjah, which might occur if the inert drug, which is hardly to be distinguished by physical characters from the potent drug, were not destroyed. From these facts it follows that all the traders have in the Government bonded warehouses at a given time Ganjah of two sorts, viz., Ganjah a year old, and Ganjah more than a year old. The native will not have any of the Ganjah more than a year old if he can get the newer stuff. The English buyer, in spite of all that has been published regarding Ganjah, seems to be ignorant of this, and the native dealer finding his English customer prepared to take the older Ganjah, and knowing that he cannot sell it to his native customers, naturally unloads his old stock on the English buyer. The complaint of the wholesale houses you refer to is the result. You enquire how the best Ganjah is to be got by the trade. Of course it would be advisable to get it from Calcutta only, but here there is a difficulty, for since 1895 the Government has levied a duty on Ganjah exported to London from Calcutta for *bonâ-fide* medicinal purposes. This duty was previously levied only on Ganjah used as a food accessory within Indian territory. This duty makes the price of Bengal Ganjah prohibitive as compared with Bombay Ganjah, on which, so far as I can learn, no such duty is levied when the drug is exported for pharmaceutical purposes to London or Paris. An application for a remission of the duty would, probably, result in the imposition of a corresponding duty by the Bombay Government, and would drive the English trade in this article out of India entirely. There is only one season of the year when it is wise to import Ganjah, that is in April or May, just after the new crop has been harvested. But even then everything will depend upon the English agent being able to get the fresh drug. Unless the agent is careful he may be saddled with Ganjah of the previous year's harvest. If the trader is prepared to buy Bengal Ganjah and pay the Excise duty which Government levies on the article, they will get it at that time of the year without any trouble. The Excise duty is something like 4s. per lb. of crude Ganjah.

Dr. Prain kindly expresses himself as willing to give any help he can in advising the agents of English buyers how to go to work in Calcutta to get the genuine Ganjah of the current year. He is very strong upon the point that it should be purchased once a year only, when the new harvest comes in.

From the point of view of the pharmacist who does not at present know what the active principle of Cannabis really is, it seems that if it were possible to procure a tincture made in India from the fresh drug collected in Bengal it should yield the most satisfactory preparation. If the drug deteriorates rapidly, as appears from Dr. Prain's statements, and if it is uncertain whether this is due to oxidation and consequent decomposition of the active principle, or to loss of a volatile principle by keeping, such a preparation should contain the active principle in an unaltered condition, especially if kept in full bottles.

It is worthy of consideration whether some other tinctures such as digitalis would not be more valuable if made in the same way. In this case the fresh leaves can be obtained all the year round in this country, although whether they are equally active at all times of the year has not, that I am aware of, been proved. Such a tincture of the fresh plant has, I have been assured by medical men who have used it, proved always reliable as a heart tonic, but it has been prepared from the leaves when the flower buds are beginning to open. The infusion is usually preferred, especially in Scotland, for use in relieving dropsy, and for this purpose the fresh leaves are, as already stated, obtainable all the year round, at least in the South of England. Perhaps the one tincture in which fresh leaves are not so desirable is that of Coca, since as a heart stimulant the more ecgonine they contain the more useful the tincture would be. The mode of always chewing the leaves with a little alkaline ash or lime, adopted in Peru and Bolivia, ensures the decomposition of cocaine and the setting free of ecgonine, or its benzoyl compound, and such stimulant virtues as Coca possesses are doubtless due to ecgonine and not to cocaine.

SOME DISPENSING METHODS.*

BY WILLIAM S. GLASS.

The following notes are intended to be suggestive. In prescriptions for mixtures—the most numerous of the forms required by medical men—difficulties frequently occur, and it is feared that the practice of chemists in solving these frequent difficulties is not uniform. Nor do chemists indicate, as a rule, on the prescription how they have solved the difficulty. The consequent variation in practice tends to produce in the public mind a suspicion that prescriptions are not always "accurately dispensed." Take, for example, the following:—

(1) ℞ Quininæ hydrobrom. .... grs. xxiv.
Aquæ.................................. ℥viii.
Misce.

The quinine salt here might be dissolved by one chemist and suspended, and a "shake" label merely put on by another.

(2) Mixtures containing salts are usually strained, and ought to be so. Those containing excess of potassium chlorate and other salts which are not very soluble cannot be strained conveniently without separating the part of the salt undissolved. If the salt is dissolved by means of hot water precipitation takes place in the form of crystals. In such cases the proper method is to dissolve by means of heat (if such does not alter the composition of the salt), strain, cool, and rub the separated crystals finely in a porcelain or glass mortar.

(3) Mixtures containing bismuth subnitrate, without any suspending agent, may be dispensed in various ways, according to the opinion of the dispenser. The following, at least, might reasonably be adopted:—(*a*) "Shake" simply, (*b*) mucilage of tragacanth, (*c*) mucilage of acacia, (*d*) glycerin. The first is hardly permissible unless the bismuth subnitrate is of a light, bulky nature, as is the case with some brands. The others would make little difference in the appearance of the mixture, only in the case of glycerin a sweetish taste would be detected.

(4) Prescriptions for drops are sometimes a source of difficulty and worry to the chemist. Take, for example, the following:—

℞ Tinct. Digitalis
Sig. mx. t. i. d.

Two methods here of writing the directions might lead to different results. "Ten drops" might be a very reasonable interpretation of the physician's instructions, but the dose might vary according to the method of dropping and the size of the lip of the bottle—not to speak of exceeding the dose. "Ten minims (measured in a glass measure)" might very allowably be written on the label, and the patient supplied with a suitable measure, thus ensuring accuracy.

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*Communicated to the Pharmaceutical Society, at a meeting held in Edinburgh, on Wednesday, April 23, 1902.

(5) *Powders.*—Potassium bromide and sodium salicylate are not, as a rule, sent out in an impalpable form, but in a more or less crystalline form. To the public, and especially to the patient, the "more or less" means a great deal, and usually indicates whether the chemist is more or less an accurate dispenser. A note on such prescriptions as to the fineness of the powder used may seem needless, but such dispensing notes would sometimes establish confidence and prevent misunderstanding.

(6) In preparing the following prescription:—

℞	Quininæ sulph.	gr. i.
	Pulv. rhei	grs. iii.
	Phenacetin	grs. viii.

Misce. Ft. pulv. tales xii.

Mixing by means of a knife on a piece of paper might be adopted in preference to the more usual method of mixing in an enamelled mortar. Mixing by knife in small quantities where the ingredients are in fine powder may be preferable, but the mortar in most cases gives best and quickest results.

(7)	℞	Pulv. rhei	ʒiss.
		P. sodii phosph.	ʒss.
		P. sodii bicarb.	ʒiiss.

Misce.

In this case the sodium phosphate might be slightly dried and in powder, and in other cases "exsiccat" might be used. As this salt loses on heating more than half its weight in water, it is easy to imagine that this prescription, as variously dispensed, would not only vary in the strength of the phosphate, but also in the appearance of the mixed powder.

(8) The dispensing of pills gives more room for discussion than that of any other form. Some chemists holding that pills should be moderately soft, so as to be more soluble, find that in such a condition they are larger. Pills containing minute quantities of medicament are made up variously, according to the opinion of the dispenser. The excipient being frequently left to the option of the dispenser, pills vary in size and appearance accordingly. Extract of gentian gives solidity, but adds to bulk. Glycerin gives softness, and where the ingredients are chiefly dry material a pill can be made with a very minute quantity. A mixture of spirit, water, and glycerin is a very useful excipient, and *secundum artem* is also a very useful addition. The size and consistency of the pill might afford less room for complaint by the patient than the appearance of the finished pill. It may (*a*) have a polish by free use of the pill finisher, or (*b*) be partially whitened by means of French chalk, or (*c*) have a brownish tint by employing liquorice or cassia powder, or (*d*) be sugar-coated, or (*e*) be silvered, or (*f*) be varnished.

(9) Ointments in small quantities are frequently prepared by means of a palate knife on a porcelain slab. If the powders are not sufficiently fine they should be either powdered in a mortar or the whole mixed in a mortar. Mercurials and corrosive substances, when mixed on a slab, should be mixed by means of a bone or ivory knife. These knives are not very convenient for manipulating ointments, and I have often wished that they could be thinner, or that a non-corrosive metal suitably strong could be substituted.

(10) Plasters are frequently ordered by prescription without any indication as to what material they are to be spread on. The manufactured plasters with rubber basis are not the pharmacopœial plaster, and it is incumbent on the chemist, with a due respect to his status, to spread prescription plasters on some suitable material. Adhesive plaster, sheep's skin, chamois, calico, and muslin are among the most frequently employed, and the want of some standard pharmacopœial material for spread plasters affords at least freedom to use whatever may be most convenient. In regard to the spreading of blisters, it is easy to make an elegant emplastrum cantharidis, but the emplastrum cantharidis, B.P., is hardly ever satisfactory. The use of powdered flies or liquor epispasticus is a necessary addition.

(11) *Dosage.*—In preparing a dozen suppositories it is necessary to use materials for one or two more. In preparing pills and powders provision is not made for loss, and the consequence is that the patient never gets the full strength of the medicine as ordered. In small quantities of potent drugs the percentage of loss is greater.

COPPER IN NUX VOMICA.*

BY J. RUTHERFORD HILL.

In a communication read at an evening meeting two years ago (*Pharm. Journ.* [4], **10**, 417), I traced the greenish-blue coloration of a mixture containing tincture of nux vomica and aromatic spirit of ammonia to the presence of a small percentage of copper in the tincture. Examination of several commercial samples of powdered nux vomica indicated the presence of copper (in one case to the extent of 0·24 per cent.). Two samples of nux vomica seed also gave indication of copper. The point as to whether copper could be regarded as a normal constituent of nux vomica seeds was left for further inquiry. Since then diligent inquiry has been made, but I have never been able to get any definite information as to whether copper is ever used in any form in preparing the seeds for the market or in storing them. I have been told that, notwithstanding their poisonous nature, the seeds are liable to be attacked by species of mite, and that possibly they may be washed with some solution of a copper salt as a preservative, but I can get no confirmation of this. In consequence of my note, Mr. David Hooper, of Calcutta, examined some nux vomica fruits from Mysore, and he states the result as follows (*Pharm. Journ.* [4], **11**, 523):—"I ignited two of the largest and examined the ash particularly for copper. There was no trace. It is very evident that copper is not a natural constituent of Strychnos fruits." My experience had shown me that it is very easy to miss a small trace of copper in a seed unless one is on guard, and therefore I suggested that it was important to know the method adopted by Mr. Hooper, but there has been no further report. It was mentioned in my letter (*Pharm. Journ.* [4], **11**, 551), that I was waiting the arrival of fruits from India to make the inquiry which Mr. Hooper reported in the foregoing definite terms. I said, "Mr. Hooper, if he is right, only indicates where not to look for" the source of the copper. Since reading the original paper I have received communications from quite a number of pharmacists, stating that they have got the same greenish-blue mixture with a tincture of nux vomica, in which they did not find copper, and also that they had examined nux vomica seeds which gave no indication of copper. In several of these cases I have been able to show that the small trace of copper had been missed in the way I myself nearly missed it at first. As I do not know the method adopted by Mr. Hooper, I cannot say whether he may not have missed it also.

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* Communicated to the Pharmaceutical Society, at a meeting held in Edinburgh, on Wednesday, April 23, 1902.

One of our members, Mr. Alexander Meldrum, of Calcutta, has very kindly procured for me, from the Calcutta Botanic Gardens, a quantity of the fresh fruits and leaves of nux vomica. They have just come to hand, and time has only permitted of a rough qualitative examination of the seeds of one of the fruits. Two full-sized seeds were incinerated, and the ash treated with boiling dilute sulphuric acid and filtered. The clear filtrate was divided into two portions. To one was added about half an inch of the finest freshly-polished iron wire. A similar piece of wire was placed for comparison in a small quantity of dilute sulphuric acid. In about two hours the wire in the solution of ash had a perfectly distinct coating of copper. After ten hours the coating was quite unmistakable and easily recognisable even by an untrained observer. After twenty-four hours the iron wire in the dilute sulphuric acid was entirely dissolved, but the copper wire, being insoluble in dilute sulphuric acid, remained unchanged. To the other portion of the filtrate ammonia was cautiously added. A distinct blue tint was seen by two trained observers when the ammonia reached excess, but the blue tint speedily became imperceptible. It might quite readily have escaped notice altogether. This was quite in accordance with my previous experience. It is also confirmed by Vedrödi (*Pharm. Journ.* [4], **3**, 177), who says, "the (ammoniacal) solution (from the ash) when compared with a standard copper solution showed a considerably less amount of copper than was actually known to be present, and after a short time the precipitate had absorbed the colour from the solution completely." I should say an iron Bunsen was used for incineration. I purpose continuing the investigation, but meantime there seems conclusive evidence that some nux vomica seeds do naturally contain copper, that the original statement of Meissner to this effect is accurate, and that the dictum of Mr. Hooper at least requires qualification.

THE TURPENTINE TEST FOR GLACIAL ACETIC ACID.*

BY THOMAS DUNLOP.

Subsequent to the publication (*Pharm. Journ.*, August 26, 1899) of Mr. Alcock's suggested application of the converse of the B.P. test for oil of turpentine as a test for the strength of glacial acetic acid, I submitted to that test the stocks I received, but always with negative results, even although they responded to the specific gravity and total acidity tests. The oil of turpentine I used was my stock at the time, consequently I concluded it was it that was at fault. This was, in part, confirmed by Mr. Duncan's paper (*Pharm. Journ.*, March 21, 1901), directing attention to the varying solubility of oil of turpentine in glacial acetic acid.

In May of last year, however, a supply (No. 1) of glacial acetic acid I received which, at first, gave a negative result, subsequently responded to the test. Shortly afterwards I observed that separation had taken place, and, on shaking, solution did not again occur. I then thought that perhaps change of temperature was the cause of separation, and that proved to be the case, for, on holding the test-tube in the closed hand for a few seconds and then shaking, solution was restored. The solution was only temporary as, the temperature again falling, opalescence was soon followed by separation. The temperature at separation was 18° C., at solution 22° C., whilst at 20° C. the liquid was bluish white. Before 21° C. was reached the acid could be seen separating from the point of the thermometer This acid was subsequently tested with rectified oil of turpentine (Howard's), with a like result. My attention was next directed to find in what proportions permanent solubility was obtained. The following table shows the relative proportions at different temperatures:—

Howard's Turpentine.	Glacial Acetic Acid.	Temperture C.	Solubility.	Commercial Turpentine.	Glacial Acetic Acid.	Temperature. C.	Solubility.
Minims	Minims			Minims	Minims		
30	30	19°	Opalescent	30	45	20°	Soluble
30	45	18°	Soluble	30	60	18°	"
			Slightly opalescent at 17°; slightly separated at 16°.				
30	47½	16°	Soluble, slightly separated at 15°	30	70	17°	Soluble, slightly separated at 15°
30	50	15°	Soluble	30	75	16°	Soluble

In August another supply (No. 2) when tested was soluble volume for volume at 15·5° C. A few days later I again tested Nos. 1 and 2, and found both soluble at 19° C. On the following day No. 2 had separated at 17° C., whilst No. 1 was opalescent. This anomaly suggested a change of barometric pressure as a probable cause, and on making inquiry I found that at the time of solution the barometer registered 29·28 inches, whilst at the time of separation it only registered 29·16 inches.

My experience of the test since June last has been that acids of full strength respond to it irrespective of temperature and pressure when it is used in the proportion of three volumes to five volumes of acid. Perhaps that may only apply to my present test stock of oil of turpentine.

As indicating the sensitiveness of the test I may mention that the addition of one drop (less than 1 per cent.) of water to a solution containing 100 minims of glacial acetic acid and 60 minims of rectified oil of turpentine (Howard) produced an immediate and complete separation, that at a temperature of 27° C. the mixture was quite milky, and that it took four volumes of this diluted acid to make a clear solution with one volume of rectified oil of turpentine (Howard).

In the preface to the Pharmacopœia (p. xiv.) the following passage occurs:—"In stating the solubilities of chemical substances in water or other neutral liquid, attention has been paid to the general requirements of medical practitioners and to the temperatures that prevail where medicines are stored and used. 'Ordinary temperatures' are those between 50° and 70° F. (10° and 21·1° C.)." This general statement about solubility may be useful as a guide for making storage solutions, but when solubility *is given as a test* the temperature ought to be stated (as in the case of paraldehyde), for, as appears in this instance, any degree below 21·1° C. (the maximum ordinary temperature) may give a negative result. This pharmacopœial wide range of temperature was commented on by Professor Greenish in his paper on the solubilities of B.P. salts.

Squire, in defining "solubilities," does not say whether the solubility of liquids in liquids "in all proportions" is within the same limits of temperature as the solubilities of solids in liquids. In the case of glacial acetic acid, at least, temperature is an important factor in the application of the test *at the initial stage*.

In the *Pharmaceutical Journal* of January 18, 1902, Mr. Alcock again returned to the subject, and, as at first, without saying anything about the temperature at which the test was applied, he concluded that an acid which had responded to the test in August and had failed to do so in January had become hydrated.

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* Communicated to the Pharmaceutical Society, at a meeting held in Edinburgh, on Wednesday, April 23, 1902.

These observations, of the influences of temperature and pressure on the results obtained in the application of the test, taken in conjunction with Mr. Duncan's observations on the behaviour of the different varieties of oil of turpentine, lead to the conclusion that if a sample of glacial acetic acid answers the other characters and tests of the Pharmacopœia, it should not be condemned merely on account if its insolubility in an equal volume of oil of turpentine. In other words, the test is so unreliable that it should not be introduced into the Pharmacopœia (as suggested), and that where it already exists it ought to be deleted.

THE TITRATION OF BORIC ACID AND BORAX.*

BY THOMAS S. BARRIE, F.C.S.

The quantitative determination of boric acid was until 1894 a very laborious process, the acid or a borate treated with a mineral acid being distilled with pure methyl alcohol into a vessel containing a known weight of pure calcium oxide and, after driving off the alcohol calculating the amount of boric acid from the increase in weight of the lime (Gooch's process). In 1894 R. T. Thomson published a new and beautiful process for the determination of boric acid, which has given rise to an ever-increasing literature, though hitherto the original process has not been improved upon. The present contribution brings out little that is new, and is intended chiefly to direct the attention of pharmacists to the process and to suggest a test for inclusion in the monographs upon the acid and borax in the next pharmacopœia.

In purely aqueous solution boric acid is neutral to methyl orange and acid to phenol-phthalein. On attempting to neutralise the acid in presence of the latter indicator with normal solution of sodium hydroxide, about a fourth part only of the theoretical amount of alkali required has been added when the solution begins to show a red tinge, which deepens very slowly; the end reaction is indefinite. In presence of glycerin, however—and the more glycerin the better—the end reaction is very sharp. This action is probably due to the production of a less hydrated acid (metaboric), capable of forming a neutral salt under the conditions of experiment. On diluting this solution with much water it becomes slowly alkaline, due to the resolution of the sodium metaborate formed into borax and sodium hydroxide.

The amount of glycerin which must be present before and after the testing is complete being of such importance, it is interesting to note what various authors suggest as a proper quantity:—*Pharm. Journ.* [4] **6**, 570, 20 per cent.; Zschimmer (*Chemical Journal*, 1901), 1 gramme in 100 C.c. pure glycerin with a little water; R. T. Thomson, the titrated liquid to contain at least 30 per cent. of glycerin. My own experiments indicate that about 40 per cent. of glycerin in the liquid at the end of the titration is best, as the end reaction is very precise and concordant results are obtainable. In practice I generally use more, dissolving about a gramme of the acid in 50 C.c. of water, adding 50 grammes of pure glycerin and a few drops of phenol-phthalein solution and running in the alkali in sufficient quantity (about 16 C.c.). By always keeping these proportions it is easy to get good results.

It is most important that the solution of sodium hydroxide be free from carbonate. Any trace may be easily removed by first treating the solution with solution of barium hydroxide, then removing excess of barium by a few drops of a strong solution of sodium sulphate and filtering. Small quantities of carbon dioxide spoil the end reaction.

A curious point about the titration of boric acid is that the alkali must be standardised from the pure acid; else all results obtained with that alkali will come out consistently high. As an example of this I give the following figures, obtained a few days ago, viz.:—1 C.c. alkali standardised from normal acid was theoretically equal to 0·046775 gramme boric acid. When standardised from two specially purified samples of boric acid, one prepared by myself and the other by a friend, 1 C.c. alkali was found equal in one case to 0·04621 gramme and in the other case to 0·046374 gramme boric acid, giving a mean of 0·046292 gramme boric acid.

Boric acid is to be had pure without difficulty; still, there seems no reason why a quantitative test should not be inserted in the Pharmacopœia monograph, and thus bring the acid into line with the other mineral acids. The test might be referred to in the following terms, viz.:—

> **One gramme of the acid dissolved in 50 cubic centimetres of warm distilled water should require, after the addition of 50 grammes of glycerin and a few drops of phenol-phthalein solution, 16·25 cubic centimetres of volumetric solution of sodium hydroxide for neutralisation.**

Practically another tenth of a cubic centimetre will be required unless the alkali be standardised from pure boric acid.

THE TITRATION OF BORAX.

Many processes have been suggested for the determination of borax. For example, its determination from the sodium chloride derivable from a given quantity by the use of hydrochloric acid and the official process dependent on the determination of the alkalinity (or sodium oxide) of the substance, a result possible because boric acid is neutral to methyl orange, may be cited. The official process, though important, is very apt to give erroneous figures and is not followed by public analysts and such-like, although used as a confirmatory process. As borax is usually made by boiling native calcium borate with sodium carbonate, the commercial salt is apt to contain small quantities of alkaline carbonate. Calculation will show that 1 per cent. of sodium carbonate will react as 1·3 per cent. of borax, while if we assume extra alkali to be there as sodium hydroxide, 1 per cent. will be equivalent to 5 per cent. of borax. My own experience has been (and I have had many samples analysed by the process I suggest below) that commercial borax is a fairly pure article, is always super-alkaline, and consequently shows more borax by acid titration than it actually contains. As reported (*Pharm. Journ.*, [4] **7**, 534*c*), it is occasionally adulterated with sodium carbonate (up to 35 per cent.).

It would appear, therefore, that an improved pharmacopœial test for borax is to be found in the determination of the boric acid that it yields on neutralisation with semi-normal sulphuric acid. This idea is crystallised in the following, which I suggest should replace the corresponding part in the official monograph:—

> **One gramme of borax dissolved in 40 cubic centimetres of distilled water should require for exact neutralisation (indicator, methyl orange), 10·55 cubic centimetres of semi-normal sulphuric acid, and after boiling and addition of 50 grammes of glycerin should now require 10·55 cubic centimetres of normal sodium hydroxide solution to exactly neutralise (indicator, phenol-phthalein).**

As already indicated, it is advisable to standardise the alkali with boric acid in order to get correct results. Though many analyses of borax have been made, I append the results of two only, the others being very close upon those given:—

(1) By acid process.... 100·54 per cent. By alkali.......... 99·09 per cent.
(2) " " .... 100·21 " " " .... 98·5 "

In conclusion, I have to acknowledge my indebtedness to Miss J. C. Orchardson and Mr. Charles Nicolson, who did much of the practical work embodied in this contribution.

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*Communicated to the Pharmaceutical Society, at a meeting held in Edinburgh, on Wednesday, April 23, 1902.

THE THEORY AND PRACTICE OF PHARMACY.

'A Treatise on Pharmacy for Students and Pharmacists.' By Charles Caspari, Jun., Ph.G., Professor of the Theory and Practice of Pharmacy in the Maryland College of Pharmacy. Second Edition, Revised and Enlarged. Pp. 776, with 301 wood-cuts, and a portrait plate. Price 19s. net. London: Henry Kimpton. 1902.

A period of nearly seven years has elapsed since the first edition of this work was reviewed in the pages of the *Pharmaceutical Journal*, and it is not surprising, therefore, that the author has found a thorough revision of the book necessary, as well as the addition of much new matter. As a result, the second edition contains nearly a hundred pages more than the first, new chapters being added on Prescriptions and the Assay of Alkaloidal Drugs, while the chapters on Specific Gravity, Solutions, Compressed Tablets, Ointments, Plasters, and Suppositories have been largely rewritten, and others more or less extended. The general plan of the work remains unchanged, the object kept in view by the author being to supply, as far as possible, such information as shall enable the student and the pharmacist to make intelligent use of the pharmacopœial text. The pharmacopœial text commented upon is primarily that of the United States, but an attempt has been made to adapt this second edition to the requirements of British students and pharmacists, though it must be confessed that the attempt cannot be regarded as successful. For, whilst the U.S.P. formulas and processes are, as a rule, explained at considerable length, those of the B.P. receive only scanty and insufficient attention, and the notes thereon are even misleading in some instances.

Part I. of the book is devoted to "general pharmacy," and includes chapters on pharmacopœias, weights and measures, specific gravity, heat, collection and preservation of crude drugs, mechanical subdivision of drugs, solution, percolation, separation of non-volatile matter, separation of volatile matter, crystallisation, and the classification of natural products used in pharmacy. This part of the work is very freely illustrated, but it may be questioned whether such illustrations as are given here are of much value, except in pages of price lists of apparatus. Certainly, they do not help to elucidate the text in the present instance, and the space they occupy would have been employed more profitably if it had been utilised for fuller explanations of important principles. The information given is useful, so far as it goes, but the matter is much too condensed and not what readers have a right to expect at the beginning of the twentieth century. It is not too much to say that no work treating of what have been termed the "first principles" of pharmacy has yet replaced that of Barnard Proctor, which, unfortunately, is now too much behind the times to occupy the position it once did.

Practical pharmacy is dealt with in Part II. of Professor Caspari's work, twenty-four chapters consisting of notes on the different classes of galenical preparations. The arrangement adopted here is similar to that familiar to readers of 'Pharmacopedia,' but the descriptions are more brief and the notes less comprehensive than those in that latest commentary on the British Pharmacopœia. The monographs refer almost exclusively to the preparations of the U.S.P., only the briefest reference being made occasionally to B.P. preparations. Moreover, those references are not always accurate and up-to-date. Thus, the formula given for Tinctura Cannabis Indicæ is that of the 1886 B.P., and it is incorrectly stated that "ointments of oleates are officially recognised in only one instance, the ointment of zinc oleate of the British Pharmacopœia, which is composed of equal parts of zinc oleate and soft paraffin." The formula given is that of the 1885 B.P., and the fact that ointment of mercuric oleate is official in the 1898 B.P. has been overlooked. Again, the old process is given for preparing Liquor Bismuthi, B.P., and the author is apparently not aware that a syrup of glucose is now official in this country. But of much greater importance than the errors enumerated, from the point of view of the British student or pharmacist, is the fact that the references to B.P. preparations are so scanty and so few in number.

The third part of the book treats of the pharmaceutical applications of chemical science, the twenty-seven chapters of which it consists containing notes on the chief inorganic and organic substances used in médicine. Those notes, of course, are equally applicable in most cases to substances official in the British and United States Pharmacopœias, though they are, unfortunately, much too brief in most cases to give more than the barest outline of what the student or pharmacist requires to know, so that recourse must be had to other works on chemistry or pharmacopedy for the purpose of rendering the information complete. At the same time, as in the first edition of the work, nothing of great importance in medicine has been left unconsidered by the author, and the book should be found very useful as a class book by students attending courses of lectures at a college of pharmacy, where the information supplied in the book will be supplemented by that conveyed by the lecturers in the ordinary way. Students working alone, especially during apprenticeship, will probably find the explanations given insufficient for their purpose, while practising pharmacists in this country will doubtless prefer a work dealing more directly and fully with the monographs of the British Pharmacopœia. At the same time, Professor Caspari's treatise must be regarded as one of the best text-books of its kind, well worthy of a place on the shelf reserved by the pharmacist for works of reference.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

Council Prizes Examination Questions.

Friday, April 18, 1902.

BOTANY.

Time: 10 a.m. to 11.30 a.m.

[*Only four questions to be answered.*]

1. Explain how the starchy endosperm of a seed is rendered soluble for transmission into the embryo.

2. Describe fully the structure of an isobilateral foliage leaf. What modifications would you expect to find in the leaves of Moorland plants and in those of Evergreens?

3. Give an account of the life history of two of the following fungi:—

Pythium; Penicillium; Claviceps (Ergot); *Erysiphe* (Mildew).

4. Explain the morphology of the various fruits characteristic of the Sub-Orders of Rosaceæ.

5. Compare the structure of a mature ovule of an Angiosperm with that of a Gymnosperm. Describe fully the process of fertilisation found in the Angiosperms.

MATERIA MEDICA.

Time: 11.30 a.m. to 1 p.m.

1. What are the active principles of Ipecacuanha, and in what proportion do they exist in the drug? Give a process of assay.

2. Describe the Jaborandi leaflets of commerce. Give the botanical and geographical sources of the plant yielding *Jaborandi folia.* Name the active principles, and give a method of extracting the most important one. Mention any of the adulterants with which you may be familiar, and show the characters by which they may be distinguished from genuine Jaborandi.

3. What are the characters of a good sample of Opium?

4. How would you detect:—
   - (*a*) Cotton seed oil in olive oil?
   - (*b*) Hard paraffin in beeswax?
   - (*c*) Colophonium in balsam of Peru?
   - (*d*) Turpentine in oil of lemon?

CHEMISTRY.*

Time: 2 p.m. to 5 p.m.

1. Give an account of the preparation and properties of the following

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* *In framing Answers, Candidates should not enlarge upon the Questions, but should confine themselves to giving, as briefly and clearly as they can, the information required.*

substances:—Orthophosphoric acid, iodic acid, chlorine peroxide, sulphur monochloride.

2. What is the chemical character of clay, glass, blast furnace slag? Explain the chemical action which takes place when manganous sulphate is mixed with borax and the mixture fused on a platinum wire in an oxidising and in a reducing flame.

3. Explain by chemical equations the following analytical reactions:—(*a*) The solution of arsenious sulphide in ammonium sulphide, (*b*) the prevention of the precipitation of magnesium by ammonia when ammonium chloride is present, (*c*) the production of a precipitate and its solution in excess of the reagent when ammonia is added to a solution of copper sulphate, (*d*) the oxidation of a ferrous salt by nitric acid.

4. Explain the origin and meaning of Avogadro's hypothesis, and give an example of its application to a chemical problem.

5. Give an account of the preparation of lactic acid and of its synthesis. What are the chief reactions which lactic acid undergoes? How is the existence of the different lactic acids accounted for?

6. State briefly the experimental facts on which Kekulé's (hexagonal) formula for benzene is based.

Examinations in London, April, 1902.

MINOR EXAMINATION.

Candidates examined	**315**
„ failed	**225**
„ passed	**90**

Ashworth, Albert Edwd.; Blackburn
Baker, Chas. Ballard; Nuneaton
Barker, Sidney Francis; Cambridge
Barrett, Walter Ernest; Leeds
Barritt, Edward Coventry; Dalston
Brook, William Benj.; Hereford
Bunnell, Albert Ernest; Heywood
Campbell, George; Penrith
Carter, Arthur; Tamworth
Chesworth, C. P.; Market Drayton
Colebrook, Donald; Shooter's Hill
Collitt, William S.; Northallerton
Davies, Henry Charles; Croydon
Delve, William Henry; Manchester
Edgar, Allan Herbert; S. Norwood
Evans, John William; Rhuddlan
Falding, Walter B.; Wakefield
Fletcher, Edwd. Norman; Halifax
Foster, James; Ellesmere
Fry, Albert; Taunton
Gaze, J. Edwin; Bury St. Edmunds
Glaholm, W.: Hebburn-on-Tyne
Goodwin, Fredc. James; Stafford
Goodyer, William; Weston
Gower, Percival T.; Tonbridge
Graves, Herbert Hodgson; Alford
Hall, Henry; Cardiff
Haselgrave, Edward E.; Wakefield
Henchley, Ernest; Portsmouth
Hickson, John Alfred; Malton
Hinchco, John H.; Stoke-on-Trent
Holden, Benjamin; Blackburn
Holding, Walter Ernest; Audley
Holmes, Oscar Dewhirst; Sheffield
Holt, William; Blackburn
Horniblow, Kate Nellie; Charlbury
Hough, Bernard Grindrod; Sale
Hoyles, George Edward; Hull
Hurn, William Henry; Norwich
Jensen, Harold R.; New Brighton
Johnson, H. T.; Pateley Bridge
Jones, Albert Thornton; Cardiff
Kenway, Bertha Anne; Clifton
Leicester, Charles; Oldham
Lowe, Frances Withenbury; Bristol
Lyall, David Watson; Montrose
Mackay, Charles; Bradford
Marris, George Wesley; Grimsby
Mathews, Francis C.; Cirencester
Millar, Benjamin; Darlington
Mortimer, Henry; Batley
Nash, Alfred Wilkinson: Deal
Northey, John Henry; Alford
Nowell, Albert H.; Birmingham
Oliver, Seth Harry; Holsworthy
Osborne, Harold Edwin C.; London
Owens, James Alfred; Kington
Paley, Frederick G.; Aberystwith
Parson, Sydney James; Cambridge
Porter, George Bilton; Driffield
Rees, Samuel Thomas; Carmarthen
Reynolds, Benn Roland; Narbeth
Roberts, Arthur John; Falmouth
Rodhouse, Lewis; Leicester
Senior, Herbert Clare; York
Sewell, Arthur Elliott; Peterborough
Slight, Harold; Nottingham
Sloman, Courtenay; Torquay
Smith, Philip S.; Market Rasen
Spicer, William Scutt; Dorchester
Spruce, Charles Francis; Llandudno
Spurin, Stanley Russell; Plymouth
Starmer, G. F.; Tunbridge Wells
Sumption, William C.; Blackwood
Sykes, Archibald; Oulton
Talbot, John; Blackpool
Taylor, Walter Percy; Wellington
Todd, John; Cockermouth
Tracy, Charles Henry; Dorking
Trott, Edward Henry; Bolton
Twidale, Herbert; Newark
Waugh, Herbert Leedham; Halifax
Williams, Arthur; Hayle
Willis, Francis Edward; London
Wilman, Francis A.; Bradford
Wilson, William Douglas; London
Wreathall, Robert Douglas; Hull
Yates, Francis Harold; Blackpool
Yates, Henry Henley; Swinton
Yeomans, Frederick A.; Warrington

Certificates by approved examining bodies were accepted from the undermentioned thirty-four persons desirous of being registered as Apprentices or Students:—

Annakin, Robert W.; Thirsk
Archer, Fred; Guiseley
Beaumont, Percy; Sunderland
Bernhardt, Leopold; London
Bohn, John Dundas; Windsor
Bransom, James J. B.; Brentford
Cherrington, William H.; Newark
Crisp, Fredk. W.; Moreton-in-Marsh
Curtis, Frederick F.; Folkestone
Denerley, John; Denton
Dixon, Percy G.; E. Grinstead
Freeman, John E.; King's Lynn
Glantz, Adolph R. W.; London
Hay, William; Hull
Hill, Ada Moss; Scarborough
Hill, Fred; Cheltenham
Hind, John A. A.; Kibworth
Hoskins, Sydney T.; Falmouth
Jones, Griffith H.; Bontnewydd
King, Bernard J.; Melksham
Lorimer, Douglas J.; Southampton
Morris, Walter Osmond; Shanklin
Nowell, John Stanley; Nelson
Richardson, Sidney F.; Hull
Robertshaw, Benjamin; Burnley
Robinson, Edwin Clegg; Oldham
Roskrow, Albert Cyril; Redruth
Singleton, Robert; Blackpool
Sweetman, Robert V.; Ludlow
Thomas, Rupert D. S.; Aberystwith
Webster, Maurice; Wortley
Wilson, Daniel C.; Dundee
Wingfield, Sidney; Bolton
Worfolk, Arnold N.; Ilkley

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

Evening Meeting in Edinburgh.

The closing evening meeting of the session was held in the Society's House, 36, York Place, Edinburgh, on April 23, Mr. Peter Boa, Chairman of the N.B. Branch Executive, in the chair.

The first communication was on

The Titration of Boric Acid and Borax,

by Mr. **Thomas S. Barrie**, F.C.S., and is printed at page 345.

Mr. **Duncan** said he agreed with Mr. Barrie. From his own experience of Thomson's process, he had also found that in estimating by the pharmacopœial method, with methyl orange, he got 0·51 per cent. in excess, and Mr. Barrie got 0·54. It would be a serious objection if they had to use pure boric acid to standardise the sodium hydroxide. He used oxalic acid to standardise his sodium hydroxide solution, and found that a quantity of standard solution, equal to 0·607, gave with boric acid 0·604, and with borax, what was equal to 1·274 gave with boric acid 1·28, and these were practically the same. The process was an excellent one, but he was not keenly in favour of introducing additional tests into the Pharmacopœia.

Mr. **Hill** said Mr. Barrie mentioned that the solution, after finishing titration, contained more than 40 per cent. of glycerin. Taking his figures—50 C.c. of solution and 50 Gm. equal 40 C.c. of glycerin and 16 C.c. of volumetric solution it worked out between 37 and 38 per cent. in the finished liquid.

Mr. **Barrie**, in reply, said he thought his figures about the percentage of glycerin were correct; he meant 40 per cent. by weight, and not by volume.

The next communication was on

The Turpentine Test for Glacial Acetic Acid,

by Mr. T. **Dunlop**, and is printed at page 344.

Mr. **Duncan** said he agreed with Mr. Dunlop that the suggested test for acetic acid was of no use. The Pharmacopœia allowed the use of turpentine from various species of pines, and variations in specific gravity, odour, and boiling point were also permitted, with all their variations. It was only natural to expect variation in the solubility; also he had observed the effect of change of temperature, and this was noted by Flückiger many years ago. He found that turpentine, unlike many essential oils, became more soluble with age, both in acetic acid and in alcohol. A sample, which two years and three months ago was soluble 1 in 5 of glacial acetic acid, was now soluble 1 in 1½. It was in a six-ounce bottle, half-full. The Pharmacopœia defined glacial acetic acid as 99 per cent., the titration test indicated 98·9 per cent., and the boiling point 98·2 per cent. Until the Pharmacopœia set stricter limits in regard both to glacial acetic acid and oil of turpentine, it was useless to think of the one being a test for the other.

Mr. **McDiarmid** said he had examined his stock of oil of turpentine, and found that it dissolved easily in an equal volume of glacial acetic acid at 15° C. He tested a sample of Russian oil of turpentine, having a tarry odour, and it also was readily soluble. He had never had any difficulty in obtaining a clear solution, and he thought Squire was correct in saying oil of turpentine was soluble in all proportions in glacial acetic acid. His acid on titration indicated 98·5 per cent.

Mr. **Lyon** said he felt there was some confusion about this matter, and more study was required to clear it up. Personally, he had never had any difficulty in applying this test to samples of oil of turpentine.

Mr. **Maben** said he also had personally always obtained a clear solution with this test. Mr. Duncan's remark about oil of turpentine increasing in solubility with age was interesting.

It was well known that oil of lemon, and such like, became less soluble with age.

Mr. Hill said, while apparently experiences differed, there was a general agreement with Mr. Dunlop's opinion that this test should not be introduced into the Pharmacopœia. He thought Mr. Dunlop indicated a possible error into which some observers had fallen. He mentioned that one sample which had dissolved immediately began to separate, and could not again be dissolved on shaking. From experience he could say that while a sample appeared at first to dissolve it would separate if allowed to stand for a short time.

The next communication was on

Some Methods of Dispensing,

by Mr. Wm. S. Glass, and is printed at page 342.

Mr. Henry said he disapproved of the suggestion to dispense potassium chlorate mixtures with hot water. Mr. Glass was seeking uniformity, but he gave four methods of dispensing bismuth mixtures, without indicating which should be preferred. There would be considerable difference between such a mixture dispensed with mucilage and with glycerin. He thought they should not add to a doctor's prescription, and if no suspending agent was presented they should dispense it with water alone. With regard to minims, it was difficult to know what to put on the label, as doctors often meant drops. He did not think they were justified in using dried sodium phosphate in dispensing.

Mr. Lyon disagreed with what Mr. Henry said in regard to adding a suspending agent to certain mixtures. In a mixture, for instance, containing bismuth carbonate and sodium bicarbonate, he thought the addition of mucilage of tragacanth did not interfere with the action of the medicine, and it enabled them to send out a most presentable mixture. He disapproved of adding powdered cantharides to fly blister. His experience, however, was that Emplastrum Cantharidis, B.P., was very variable in quality, and could scarcely ever be got twice alike. Plasters such as belladonna should be spread on sheep skin. The official syrup of glucose was the most generally useful pill excipient. He found that aloes and iron pills made a year ago with that excipient were still in a perfectly pliable condition. In regard to coating pills, a solution of gum juniper in absolute alcohol gave very good results.

Mr. McEwan was surprised that tragacanth should be suggested as a suspending agent for bismuth after the exhaustive paper by Mr. Lawrence, of Oban. Two dispensers, by adopting a different order in mixing, often produced very different results in dispensing the same prescription.

Mr. Barrie said it was a good plan always to assume that medical men understood what they were about when prescribing.

Mr. Thompson said his experience was that mercurials in an ointment did not affect a steel spatula in the absence of moisture or acid. He had some time ago made some ointment of yellow oxide of mercury, using a steel spatula, and there was no sign of any action. Flexible steel spatulas coated with vulcanite answered well.

Mr. Hill said that, as far as he understood Mr. Glass, what he intended to suggest was that the particular method adopted and excipient or suspending agent employed by the dispenser should not only be noted in the prescription book, but also upon the prescription, so that if taken to another establishment it would be dispensed in the same way.

The Chairman said many dispensing difficulties arose from unnecessary interference with the prescription. Crystallised phosphate of soda reduced to powder should always be dispensed when prescribed as an ingredient in a powder. His experience was that the pharmacopœial cantharides plaster was satisfactory. It should not, however, be used too soon after being made; it improved by keeping, as the fatty matter seemed to abstract the active matter from the cantharides. He entirely disapproved of the principle of making seven suppositories when only six were required. There was danger of putting the greater part of the seven suppositories into the six. With regard to the mixing of powders, if the ingredients were mixed on a highly glazed paper, the whole twelve powders could be weighed out without loss. That could not be done with a mortar and pestle. It was well known that a steel spatula could be used for mercurial ointments in the absence of water or acid.

The last communication was on

Copper in Nux Vomica,

by Mr. J. Rutherford Hill, and is printed at page 343.

Specimens of fruits, twigs, and leaves of *Strychnos nux-vomica* were exhibited. Attention was also directed to a donation of bark of *Cryptocoryne australis*, from Queensland, sent by Dr. Gordon Sharp, and reported to possess an action like curare.

On the motion of the Chairman, votes of thanks were awarded to the authors of the papers and donors of books and specimens, and on the motion of Mr. Henry a cordial vote of thanks was awarded to the Chairman.

Obituary.

MacEwan.—On April 15, at 37, Hornsey Lane Gardens, Highgate, N., Agnes Margaret, daughter of Mr. and Mrs. Peter MacEwan. Aged 18. [Corrected announcement.]

Marshallsay.—On April 19, Henry Raynold Marshallsay, Chemist and Druggist, Richmond, formerly of Wareham. Aged 31.

Maxey.—On April 15, John Thomas Maxey, Chemist and Druggist, Wisbeach. Aged 45.

Robinson.—On April 17, at Zurich Villa, Pendleton, Manchester, Margaret, wife of Alderman Benjamin Robinson, J.P., M.P.S.

LETTERS TO THE EDITOR.

Council Election, 1902.

In May next the members of the Pharmaceutical Society will be expected to record their votes at the above election. In soliciting their votes and influence in securing me a seat as their representative on the Council, I wish to make the following statements of my views on some of the pharmaceutical matters requiring attention:—The title of pharmaceutical chemists, chemists and druggists, etc., needs protection. By the Pharmacy Act, 1868, none but those who could satisfy the Board of Examiners of their pharmaceutical knowledge were to be allowed to practise the art of pharmacy, or exhibit any title signifying their ability to do so. To-day, although no test case has ever decided the point, any limited liability company is permitted to use the title to the deception of the public, the endangering of its safety, and to the detriment of those who have duly qualified, thus taking away the sole right of the pharmacist to the practice of pharmacy, as well as his title. No power can prevent these companies from competing with us in all the miscellaneous articles which usually abound in most modern establishments, but in view of the principles of the Act named, and in common justice to us, I maintain they have no right whatever to the practice of pharmacy, or to exhibit any title which, to the public, may indicate their fitness. Such permission is a grave injustice to those who by sheer brain effort have denied themselves much to obtain their diplomas, and is a positive danger to the public safety, as also a hindrance to the proper advancement of pharmacy. Both the public and duly qualified pharmacists have the right to expect to be protected from this gross infringement of the principles of an otherwise useful Act of Parliament, which constitutes an anomaly absolutely without precedent. Surely the protection of the public safety, justice to the qualified, and the advancement of pharmacy, have more weight than the so-called "vested interests" of the capitalists, who dabble in drugs, and have done, and still would do, their best to usurp our rights to the monopoly of pharmacy created by the Pharmacy Act, 1868. So long as the Pharmaceutical Society (through its Council, which alone has any claim to represent our trade rights) neglects to at least protect our title, so long will it lack the support of the majority of those engaged in pharmacy. Let our watchword always be "Pharmacy for the Pharmacist." There is a growing danger of allowing other than chemists to deal in poisons and poisonous preparations used for horticultural and agricultural purposes. It will be my constant endeavour, when elected, to protect the trade to the utmost of my power from any such invasion of its just rights conferred on it by the Pharmacy Acts. I am also of opinion "that the members of the Society may be given such information as will enable them to take an intelligent part in the proceedings of the Society," and not be satisfied with bare reports of committees as is the case at present. I am also in favour of a division of the Minor examination. "The number of subjects, and the enormous amount of detail which the candidate must bear in mind at one time, are out of all reason, and to this must be attributed, in no small degree, the large number of failures." It is also my opinion that the Pharmaceutical Council should indicate to employers the minimum amount of knowledge each apprentice should acquire during his pupilage. If to this a knowledge of book-keeping is included amongst the subjects of the equivalent Preliminary examination, we should soon obtain a race of men far better equipped for the proper acquisition of the knowledge requisite for their qualification, and less liable to failure in the business of life. This would confer a distinct boon to pharmacy, and tend to lessen the enormous number of rejections in the examination room. Such are some of my opinions. Should the members do me the honour of electing me as one of their representatives, it is my firm intention to use every opportunity that presents itself of promoting the true advancement of pharmacy and the real protection of the best interests of all duly qualified pharmacists.

London, April 22, 1902. C. E. Pickering.

Materia Medica or Pharmacopedy.

In reply to Mr. Gamble, I thought I had explained with sufficient clearness in my note (see *ante*, p. 254) that what I disapprove of is the application of the term "materia medica" both to subject-matter and subject. As applied to the various remedial substances employed in medicine, no objection need be taken to the term, but, as applied to the branch of knowledge which treats of those substances, I think its use is as distinctly inappropriate as would be the indiscriminate employment of the terms "plants" and "animals," respectively, instead of the terms "botany" and "zoology." We do not speak of a "professor of plants" or a "text-book of animals"; why then a professor or a text-book of "materia medica"? The term "pharmacopedy," now suggested, supplies a suitable name for the subject commonly miscalled "materia medica," its meaning is sufficiently clear and precise, and I fail to see that it is open to objection except on the score of novelty. It is incorrect to state, as Mr. Gamble does, that the Greek φάρμακον is associated particularly with compounded drugs, or that the term "pharmacopedy" would be more correctly spelt "pharmacopædy." It is derived directly from the Greek—φάρμακον, a drug, and παιδεία (παῖς), education or instruction—and not from a Latinised form like "encyclopædia" in which the now almost obsolete double letter "æ" occurs. As to the pronunciation of the word, it seemed to me better and more convenient that the stress should be put upon the same (antepenultimate) syllable as in the kindred terms "phar′ma-col′ō-gy," "phar′ma-cog′ra-phy," and "phar′ma-cog′no-sy," than upon the penultimate syllable, as in the word "orthō-pē-dy." I should have been quite prepared to leave this question of pronunciation to settle itself, but in a letter received from Dr. Murray, editor of the 'New English Dictionary,' he asked me to specify how I intended the word to be pronounced. In his opinion, the maker of a word ought to indicate what the word is, as well as how it is to be spelt, a word being, as he puts it, a sequence of sounds with a meaning, while a series of letters is not a word, but only its conventional symbol. In conclusion, my suggestion is that the term "pharmacopedy" should be used as the name of a subject or branch of knowledge which, up to the present, seems to have lacked an appropriate name, not that the term should be regarded as a synonym of "materia medica."

London, April 21, 1902. John Humphrey.

The letter of Mr. F. W. Gamble in the Journal of April 19 (see p. 324) seems to indicate that the writer is not aware why the term "materia medica" needs to be replaced by a more appropriate one. The term, as at present employed by the medical profession, has not for some years been used in the sense in which it has been applied in pharmacy. The medical examinations in "materia medica" refer rather to the medicinal properties and uses of drugs and medicinal preparations than to their physical and microscopical characters, geographical and botanical sources, and methods of preparation for medicinal use. Moreover, the term is commonly applied both to the substances used in medicine and to the branch of knowledge which deals with those substances. The London University has already recognised the fact that the name is no longer an appropriate one for that branch of knowledge, by creating a chair of "pharmaceutics," but the new term "pharmacopedy" and its derivatives seem to express the subject better. The arguments used by Mr. Gamble against the word "pharmacopedia" apply equally to the word "cyclopedia," which no one would dream of supposing meant a book of information "for boys," though derived from the same Greek root —παιδεία (παῖς), instruction. "Cyclopedia," or its Anglicised form "cyclopedy," means literally "cyclical instruction." Similarly, "pharmacopedia," or its Anglicised form "pharmacopedy," means literally "drug instruction." Finally, what we require is not a synonym for the term "materia medica," but a substitute for it in its incorrect application as the name of a branch of knowledge.

Sevenoaks, April 22, 1902. E. M. Holmes.

Chemists and the Society.

Mr. J. C. Hyslop, in his extraordinary letter of last week, writes:—"A typical pharmacist must be surrounded by an atmosphere of serenity and leisure." "He who pants for profitable side lines is as a fish out of water." That being the case, we all ought to pray fervently that we never may become "typical pharmacists." It is far too suggestive of the workhouse.

London, April 19, 1902. E. C. Adams.

A Photographic Problem.

I have just had a curious experience in mixing a metol quinol developer, the formula for which is: Metol, 1; quinol, 1; sodium sulphite, 10; water, 100. If the metol be dissolved first in 50 parts of cold water, together with half of the sodium sulphite, and the quinol dissolved in the remainder of the water, with the other half of the sulphite, all is well on mixing the two solutions, no precipitate being formed. But if the ingredients are mixed in any other way a huge crop of scaly crystals is deposited within twenty-four hours. The crystals are white, sparingly soluble in cold water, and readily soluble in hot water, with oxidation. If washed and dried in air they oxidise and turn brown. From 1 oz. each of metol and quinol, I got nearly ½ oz. of crystals. What do they consist of? It cannot be metol or quinol alone, because those substances are readily soluble in cold water and not so easily oxidised. A somewhat similar reaction takes place with sulphite and metol or sulphite and quinol separately, if a stronger solution be prepared, say 4 per cent. instead of 1 per cent.

Canterbury, April 15, 1902. A. Lander.

Poisoning by Lead in Pills.

Some years ago a woman said she had something the matter with her gums. I saw she was suffering from lead poisoning. On questioning her she did not know how she got it, but she was taking something in pills given her by a neighbour. She brought it for me to see, I found it was emp. plumbi. Since then I have known many cases. Some have told me they were advised to take it by medical men, which I cannot believe.

Birmingham, April 21, 1902. H. Fellows.

Since reading Mr. Murray's letter in your last week's issue, the enclosed was presented by a customer:—

1d. Bitter Apple
1d. Bitter Aloes
1d. Hyre Pique
1d. Diacalum

Similar orders have been brought before, the purchasers professing not to know whether the substances were all to be mixed together or not. Can any light be thrown on the origin of the recipe?

Chesterfield, April 22, 1902. J. R. D. Barfoot.

The Proposed Tax on Cheques.

Believing as I do that the proposed additional tax of one penny on cheques will be decidedly detrimental to the interests of all pharmacists, I venture to send you a copy of a resolution passed by the Board of the Manchester Guardian Society for the Protection of Trade, in the hope that many of our local associations may be induced to agitate in a similar manner against the imposition of the tax.

Manchester, April 22, 1902. Geo. S. Woolley.

[Enclosure.]

Resolution passed by the Board of the Manchester Guardian Society for the Protection of Trade, 15, Fountain Street, Manchester, at a special meeting, held April 21, 1902:—

"That this meeting of the Board of Directors of the Manchester Guardian Society for the Protection of Trade, which comprises over 6,000 business men and firms in Manchester and a large surrounding neighbourhood, is of opinion that the proposed additional tax of a penny on cheques is impolitic—on the grounds that it will discourage the use of cheques in small businesses; will discourage the useful and increasing practice of keeping banking accounts by small traders; and will be a retrograde step, leading in a considerable measure to a return to the practice of cash payments, which must tend to the hoarding of coin with its temptations, dangers, and disadvantages: that these discouragements to the use of cheques will be found to be so considerable in their result that the yield of the tax will be much smaller than expected; the Board, therefore, ventures to hope that the suggested tax will be abandoned."

Citrine Ointment.

Commenting on Mr. Squire's article on citrine ointment published in the *Pharmaceutical Journal* five years ago, I made use of these words: "Citrine ointment always contains free acid, but the less it contains the better, with this proviso, however, that an absolutely neutral ointment is not to be desired as its keeping properties would be very poor. . . . An ointment prepared by Mr. Squire's process looks very well, and, I should say, will keep very well, but it is, I think, too acid." The correctness of the prognostication made five years ago has been fully proved by the paper read at last week's evening meeting by Mr. Squire. His ointment has kept very well; indeed, too well, its keeping property being an evidence that it was exceedingly acid to begin with. This raises the old question once more, Have we any right to expect citrine ointment to keep unchanged for five years? Are we to make the ointment so acid that it will never lose its colour? Mr. Squire, in effect, says "Yes"; the B.P. says "No." For my part I hold to the B.P., and feel inclined to suggest that any specimen of citrine ointment that retains its colour unchanged for five years is an example of elegant pharmacy misapplied.

Glasgow, April 19, 1902. Thos. Maben.

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply.

Certificate (T. W. H.—72/33).—It will be returned in due course.

Filters (G. L.—72/32).—The address of the Berkefeld Filter Company is 121, Oxford Street, London, W.

Gas Apparatus (W. H. J.—73/1).—Apply to the makers of the instrument for the particulars you require.

Seidlitz Powders (W. A.—73/2).—You must not sell such powders as Seidlitz powders and, if they are sold at all, it should be made clear to purchasers that they are not of the recognised strength.

Softening Water (C. R. R. 72/19).—If the hardness of the water is chiefly permanent, the most effectual softener will be ordinary washing soda. That will cause the lime salts to be deposited as a precipitate of carbonate, which can be blown out of the bottom of the boiler instead of forming an adherent crust.

Instruction in Analysis (A. E. D.—72/31).—Evening classes are conducted at King's College, London, during the winter session, also at the City and Guilds of London Institute, Gresham College, E.C., and the City of London College, White Street, Moorfields, E.C. Probably those at the last-mentioned institution will serve your purpose best.

Extraction of Glycerin (R. S.—72/17).—Glycerin is formed in the saponification of all oils and fats, both animal and vegetable, so that this substance cannot be the cause of the difference in the consistence of your samples of soap. You should consult one or more of the special works dealing with the manufacture of soaps, which you will find in the Pharmaceutical Society's Library.

Pharmaceutical Journal.

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LONDON: SATURDAY, APRIL 26, 1902.

THE APPRENTICESHIP QUESTION.

The apprenticeship question has now been very thoroughly discussed by registered chemists throughout Great Britain, but the only definite conclusion that can be arrived at by an impartial observer is that chemists in certain parts of the country fail to secure apprentices so readily nowadays as formerly. The reason for that difficulty is not so obvious, and it is remarkable what differences of opinion on the subject exist among chemists themselves. Some attribute the difficulty experienced to the increased stringency of the examinations which must be passed before legal qualification in pharmacy can be secured; others find the cause in the long hours of work and scanty pay. The superior attractions of other avocations explain the whole difficulty satisfactorily to a third party; while there are some individuals who fail to recognise the existence of any difficulty at all, since they have never yet been unable to obtain as many apprentices as they required. Last, but not least, the chemists of North-east Lancashire (see p. 356) seem to be of opinion that, so far as their particular district is concerned, the scarcity of apprentices is due to the inability of the Pharmaceutical Society to restrict to legally qualified persons either the use of the statutory title denoting qualification, or the exercise of the business in which the State demands qualification. Indeed, Mr. Holt, of Blackburn, is apparently so convinced of the justice of this view that he accuses chemists who take apprentices of aiding and abetting an absurdity. As he regards the matter, when chemists have taught apprentices to the best of their ability, while simultaneously profiting by their cheap labour, the apprentices find that the privileges and position they gain—after using their brains and spending their time and money in order to qualify—are absurdly inadequate.

It may be assumed that, in Mr. Holt's opinion, an apprentice who has been taught by his employer to the best of the latter's ability, while benefiting that employer by his cheap labour, ought to be in a position to feel assured of, as well as to merit, State protection after taking the necessary steps to become legally qualified. Failing that assurance, youths decide to adopt some other means of livelihood, unless they have already entered the pharmaceutical calling and worked at the business of a chemist and druggist until it is too late to choose another trade or profession. But the arguments advanced by Mr. Holt and others who adopt similar views, fail to explain why there has been no falling-off in the number of those who present themselves for the qualifying examination. For, in spite of the alleged greater stringency of that examination and the higher fee now charged, there appear to be quite as many aspirants for legal qualification in pharmacy as ever there were. Those candidates must also have been trained, more or less satisfactorily, somewhere, and there is every reason to believe that most of them have entered the business in the ordinary way, as apprentices or pupils to registered chemists. That being the case, the conclusion seems obvious that the difficulty of obtaining apprentices cannot be universal, though the number of would-be pharmacists may not be sufficiently great to enable every chemist and druggist in business to secure as much cheap labour as he could desire. The Pharmaceutical Society, however, cannot justly be blamed for any scarcity in that respect; it is also open to doubt whether the fullest possible protection of title and practice would, now, have the result of procuring for chemists and druggists such an unfailing supply of cheap labour as some of them appear to think they are entitled to expect.

Both times and manners change, labour demands to be paid its full value nowadays, and chemists must recognise that fact as clearly as other people. The business of the average chemist and druggist being what it is, parents and guardians who think of sending youths to learn that business cannot now be expected to agree to terms which were the only ones obtainable years ago. Except in cases where a youth is entering upon a purely professional career like that of medicine, he is expected to begin to earn money as early as possible after leaving school and, since the trading element in pharmacy is now so pronounced as a rule, his parents or guardians fail to see why he should not earn as much if apprenticed to a chemist and druggist as if he were learning the grocery or drapery business, or even doing the work of a clerk or errand boy. The chemist who sees matters in a similar light, and is prepared to pay a fair wage for all work done, is not likely to experience any serious difficulty in securing apprentices, and, in view of the fact that so many chemists are now unable or unwilling to teach apprentices in an adequate manner, it is safe to assume that labour must, in the future, be paid for as labour, and the apprentice left to get his technical training as may prove most convenient. Neither the increased stringency of examinations, nor the lack of effective State protection counts for much, if anything, in explaining the difficulty of obtaining apprentices, as compared with the spread of modern notions, not the least of which is the growing feeling that all labour ought to be paid for. Work of any special character should be paid for at a proportionately higher rate than unskilled labour, but in all cases the labourer is worthy of his hire, and the sooner chemists get rid of the impression that the apprentice is fair prey as a cheap labourer, the better it will be for themselves and their business.

ANNOTATIONS.

Professional Preliminary Examinations are frequently, but incorrectly, regarded as obstacles interposed in the path of individuals who desire to enter the ranks of those privileged to exercise certain functions, the performance of which is legally restricted to duly qualified persons. That, of course, is the candidate's especial view, particularly if he happen to be an unsuccessful candidate. But, though it may seem somewhat heretical to say so, it is probably quite as incorrect to regard such examinations merely as tests of knowledge. As a matter of fact, the real purpose of a professional preliminary examination is to provide a means of testing the fitness of individuals to enter upon the course of instruction and training which shall educate them up to the required standpoint, and also enable them to satisfy the requirements of the law prior to entering upon the practice of the profession in question. In the public interest, it is desirable that no unfit person shall be permitted to practise any profession and, as the primary test of fitness, it is necessary to prove the mental capacity of those who propose to enter the professions. Such persons ought to be able to think properly and, if their school preparation has failed to train them so to do, the preliminary examination frequently serves a useful purpose in detecting the shortcoming. It is, of course, not an infallible test, many persons passing both preliminary and qualifying examinations, and yet continuing to reason illogically to the end of their lives. But, failing more efficient means of sifting out the mentally unfit, a properly devised and well conducted preliminary examination goes far to serve the desired purpose.

The School Preparation does not need to differ in the case of youths intended for a professional life from that of other scholars, until the time is approaching when the preliminary examination must be passed. Generally, as pointed out by Archdeacon Wilson, of Manchester—in an address on "The Profession of Teaching," delivered recently at Kendal—school preparation should be of a kind which will foster the desire and develop the power to overcome difficulties, giving self-reliance and sufficient knowledge of scientific principles to enable the pupil in after life to understand changing conditions and see their trend. Above all, he added, school work should encourage the spirit of inquiry which finds delight in making new observations and experiments with whatever resources are available. A century ago Humboldt constructed Prussian education upon the principle that whatever it was desired to see characteristic of the nation, must first be inplanted in the schools. Remembering that, the teacher's aim should be to give the pupil an observant eye, alert curiosity that inquires into phenomena and their causes, the habit of accurate expression, and varied interests; for then whatever work is afterwards taken up will be satisfactorily done. Archdeacon Wilson also pointed out that the soldier may know all the campaigns of great commanders, from Alexander the Great to Lord Kitchener, but his knowledge avails little unless he has cultivated inventiveness and resource that meets wholly new conditions. The existence of the nation may depend some day on the nerve and originality of the officers of the navy, since every war is a new one, and the next will be utterly unlike the last or the present. It is the same in commerce, the new problems, with combines and international unions, with a shrunken world and new modes of transit, being quite unlike the old. It is also the same with agriculture, with mechanical and chemical industries, with engineering, everything being new, and new every day. If, therefore, scholars are to be prepared for life, the supreme intellectual preparation is to be found in methods which evoke the faculty, the originality, and the mental resourcefulness of pupils.

Intellectual Preparation of the kind described by Archdeacon Wilson is essentially such as the pharmaceutical student requires. For the pharmacist, more than most professional men, and certainly more than any ordinary tradesman, requires to be original and resourceful in his methods. Given a satisfactory school preparation, which has evoked his faculty, originality, and mental resourcefulness, the preliminary examination will present no difficulty to the would-be pharmacist, and his subsequent training will be undergone with the best possible results, even though the means of training be, in themselves, unsatisfactory. A well-educated and resourceful youth will gain knowledge amid the most unsympathetic surroundings, and no obstacles that are interposed in the way of gaining accurate information are likely to check his progress to any serious extent. In pharmacy, such a youth will plan for himself, and enforce in his own case, a curriculum more severe than any which has yet been seriously proposed for general application. His studies will be arranged and pursued with the object of acquiring a proper command over all the subjects which a pharmacist ought to know, rather than of merely satisfying the examiners appointed by Statute to test his capacity to practise pharmacy, as indicted by his proficiency in those subjects. For here again the same point arises as in the case of the preliminary examination, the qualifying examination being properly regarded as a gauge of capacity and fitness, rather than as a mere test of knowledge. Later still, the well educated and properly trained pharmacist, who has cultivated inventiveness and resource that meets wholly new conditions, will succeed in life, however he may be opposed by stores and other unqualified opponents, his pronounced individuality giving him an advantage which will prove to be of inestimable value.

If the Faculty of Speaking could be taken as a measure of the speaker's wisdom, those who are most frequently heard would be entitled to pre-eminence in that respect; but experience often favours a different conclusion, as in the case of the seconder of Mr. Hills' amendment on the motion relating to division of the qualifying examination at the last Council meeting. The brief remark then made, that candidates for qualification who had been properly trained during apprenticeship should find no difficulty in passing the examination, has in it a quality of wisdom sufficient for dealing with the whole question at issue, and to compensate for the speaker's silence, on other occasions, which has been made the subject of ribald reproach.

The Life of a National Pharmacopœia varies according to the country in which it is published, and successive issues of the same pharmacopœia do not always survive for the same length of time. Thus, the first British Pharmacopœia was published in 1864, but it was found to be so inaccurate that it was superseded by another in 1867. The third B.P. appeared in 1885, and the fourth in 1898, so that the lives of the first three were three, eighteen, and thirteen years respectively. In direct contrast to the British, the United States Pharmacopœia is now issued at regular intervals of ten years, each new issue of the work appearing about three years after revision is formally commenced. A new German Pharmacopœia was published in 1900, ten years after its immediate predecessor, but no new French Codex has seen the light since 1884—*i.e.*, eighteen years ago, the previous one having been published in 1866. A new U.S.P. may be expected in the ordinary course next year, and the new Codex now in course of preparation will probably be published this year. Meanwhile, as the *British Medical Journal* points out, other European countries are putting their houses in order in a pharmacopœial sense. A new Swiss Pharmacopœia (see *P.J. ante*, p. 295) has become necessary and will be published about three years hence, a new Croatian Pharmacopœia (see *ante*, p. 305) has recently appeared, and new Austrian, Italian, Dutch, and Swedish Pharmacopœias are understood to be in course of preparation.

The German Chemist, according to the writer of a long article in a recent issue of the *Times*, has been made *facile princeps* by years of research and theoretical training and, as a result—in Great Britain, France, and the United States—many, if not most, leaders of the chemical trades, as well as assistants, are Germans by birth or training, the chemical trades of Germany being a specialty. Moreover, the technical colleges of Germany have bred a highly-efficient army of electrical, metallurgical, and mining engineers who soon find ample scope for their talents. It is pointed out that the German mind has always been scholarly by inclination and open by habit; the self-sufficiency and the indifference to foreign doings so characteristic of the British trader never having been features of the German. On the contrary, the latter has always been open to foreign influences and eager to adopt foreign ways. One important consequence of this is that Germany has advanced more rapidly than Great Britain in many departments of industry and commerce. Especially is this true as regards chemical goods and electrical machinery. So many industries depend upon chemical science for their means of progress that the present advantage which Germany possesses in applied chemistry is likely to produce far-reaching effects. In the metallurgical trades, also, Great Britain has not kept abreast of the times, and, if the present rate of progress be maintained on both sides, the German iron production will be greater than the British in about three years' time. The general conclusion reached by the writer of the article is that, though Great Britain has continued to advance, Germany has made more rapid progress.

The London Chemists' Association is issuing a circular in which it is pointed out that, at the recent dinner of the London Chemists' Assistants' Association, the President of the Pharmaceutical Society said he was satisfied that the more local associations there were, the better it would be, not only for the Pharmaceutical Society, but for the craft itself. In response to that expression of opinion, it is pointed out that the aim of the London Chemists' Association is to do for chemists in and near London the work (especially in trade matters) which local associations perform in provincial towns. In London there are some 4,000 chemists, 59 metropolitan members of Parliament, and 28 metropolitan Borough Councils, but, except the Western Chemists' Association, there has been no organisation for bringing any of the 4,000 chemists together, of approaching the metropolitan members of Parliament on their behalf, or of watching and influencing the administration of those Acts which affect chemists' interests and are entrusted to the Borough Councils for administration. While chemists are everywhere else realising nowadays how much better they can promote their own interests by working together, and in the last few years there has been in the country a remarkable growth in the number of local associations, London alone has occupied the unique position of being without a general association. In order to remedy this obvious need, the London Chemists' Association has been formed, its chief objects being, briefly, to express, when desirable, the united opinions of London chemists on matters of importance to the trade, to protect various trade customs which are often neglected, to induce chemists in all parts of London to serve on local administrative bodies, and to watch all legislation affecting chemists' interests. The annual subscription to the Association is five shillings, and the hon. secretary is Mr. R. H. Jones, 88, Norwood Road, London, S.E. It may be added that a local committee of the Association for South London is to be appointed at a meeting in the Surrey Masonic Hall, Camberwell, on Wednesday afternoon next.

Members of the Pharmaceutical Society who have not yet paid their subscriptions for the current year are reminded that unless they do so on or before Wednesday next, April 30, they will not be entitled to vote in connection with the forthcoming election of members of Council or auditors, nor to attend the annual general meeting of the Society on May 28 next. That is in accordance with Bye-Law 6 of Section I., which provides that all annual subscriptions shall become due on January 1 in every year, and if any person shall not have paid his annual subscription before the first day of May in any year his name shall be omitted from the Register of Members. It is, of course, competent to the Council to restore any person whose name has been so omitted to his former status in the Society, on payment of his subscription for the current year, but that cannot be done in the ordinary course in time to enable the restored member to take part in the elections or the business of the annual meeting.

The New replaces the Old Phytologist. In 1841 there was published under the name of the *Phytologist*, a monthly journal which had for its object the recording of facts, observations and opinions relating to botany, more especially to British botany. The pages of the *Phytologist* provided most interesting reading, particularly to systematic botanists. Unfortunately this journal, though extremely successful from a scientific point of view, failed to obtain the necessary pecuniary assistance and ceased in 1863. Another publication has since taken up the record on the systematic side. The first number of the New *Phytologist* appeared in the new year under the editorship of Mr. Tansley, of University College, London. Its aim is the same as that of its predecessor in so far as it is intended to be a medium for the exchange of ideas on botanical subjects. But as our views and ideas in botany have been so vastly extended during the forty years which have passed, so the information which will be found in the new journal will be of far wider scope, and will deal with a much greater variety of subject.

The Position of Limited Companies, under the Sale of Food and Drugs Act, 1875, is—according to the Lord Chief Justice and Justices Darling and Channell—the same as that of an individual when sales are made on their behalf. The point was raised in an appeal by Messrs. Pearks, Gunston, and Tee, Limited, from a conviction for selling butter which was not of the nature, substance, and quality demanded. The contention of the appellants was that, being a limited company, they could not be convicted, since Section 6 of the Act, under which proceedings had been taken, referred to a person only and not to a corporation. The Lord Chief Justice, however, said he could not see anything in the Act which prevented proceedings being taken against a limited company. The effective object of the Section under which the proceedings had been instituted in this case and the necessary ingredients of the offence all seemed to point to putting a company or corporation in the same position as an individual, provided the sale was made on its behalf. The question was very much the same as that arising in civil proceedings, as to the responsibility of the master for the acts of his servant. There was nothing in the Act or in the Interpretation Act disclosing a contrary intention, and Section 6 must therefore be held to apply to a corporation. Justices Darling and Channell concurred in this judgment, and the appeal was therefore dismissed.

LEGAL INTELLIGENCE.

Merchandise Marks Act.

Rival Headache Powders.

At the Birmingham Police Court, on April 17, Mr. Frederick Gibson, Gooch Street, Birmingham, was charged, under the Merchandise Marks Act, with applying a false trade description to a powder. The prosecutor was Mr. H. G. H. Jennings, chemist, 168, Hockley Hill. Mr. Jennings' case was that for some time he has been issuing to the trade a headache and neuralgia powder, known as the Red Cross, and has registered a trade mark, the most prominent feature of which was a red cross. The defendant has been accustomed to sell a powder known as "The Lily," but latterly has had stamped upon his labels a red cross, and when one of the prosecutor's witnesses called at the shop and asked for a "Red Cross" powder, he was supplied with one of these. In defence, it was contended that the red cross was a common emblem amongst chemists, and was not sufficient to connect the powder in the minds of the public with the complainant. The Bench came to the conclusion that the defendant had used a false trade description, and had not proved that he did it innocently. A fine of £10 with £5 5s. costs was inflicted. Counsel for the prosecutor asked that the objectionable labels in the possession of the defendant should be destroyed, but at length accepted an assurance that, pending an appeal, they should not be used.

Pharmacy Act, 1868.

Illegal Sale of Poison at Bradford.

At the Bradford County Court on Tuesday the Council of the Pharmaceutical Society sought to recover the £5 penalty under Section 15 of the Pharmacy Act, from Wm. Adams Cole, who is employed by the trustees of the late Thomas Clarkson, carrying on business at Tyrrel Street, Bradford. Mr. H. M. Dawson (Messrs. Beldon and Ackroyd) appeared for the Pharmaceutical Society. Mr. Neumann (Mr. C. L. Atkinson) was for the defendant, and Mr. Hines watched the case on behalf of the trustees of Clarkson.

Mr. Dawson said the action was brought to recover a penalty from the defendant selling poison contrary to the Pharmacy Act, 1868, he being an unqualified person.

Mr. Neumann said that to shorten the case he might say that he admitted that the defendant was not registered, and that the article sold was a poison. The defence was that he did not sell the poison. Entries of all the sales made in the shop were recorded on sheets of paper, and it was shown that on the day in question the article referred to was entered by an assistant, and therefore it was the assistant who had sold it and not Cole.

Arthur Foulds, private inquiry agent, in the employ of the Pharmaceutical Society, deposed that on Saturday afternoon, January 18, he purchased from the defendant in Clarkson's shop a bottle of Kay's Essence of Linseed. There was nobody else in the shop at the time.

In cross-examination the witness said there was no possibility of his being mistaken, and Cole had not been pointed out to him that day in the Court. Cole was easily recognisable because he was a man so entirely different in appearance from the ordinary shop assistant.

Mr. Neumann said the defendant's statement was that he did not sell the essence, and did not even know until he received the summons that they had had any of it in the shop. The entry of the sale was in the handwriting of Mr. Oddy, an assistant.

His Honour: Do you say that Mr. Oddy sold the essence?

Mr. Neumann: I say Mr. Cole did not sell it. The fact that this man has got up in the box and sworn positively that Mr. Cole sold it quite clears Mr. Oddy.

Mr. W. A. Cole gave evidence in support of his solicitor's statement, and in cross-examination said he was employed as a compounder of medicines. He went to the shop twelve months ago believing himself to be a qualified man, and there was no other qualified man on the premises. The qualification which he thought was sufficient was one conferred on him by the War Office. He passed an examination in 1860, and naturally thought he was qualified, but unfortunately he was not registered. He was under the impression that he was qualified to take charge of a chemist's shop and sell all things that a chemist could sell. He had never kept a chemist's shop previously since 1874.

His Honour: If you were called away for some reason after you had made a sale, I suppose you might say to Mr. Oddy: "Just enter so and so," and he would then put it down though you had sold it?

The Defendant: It is possible that I might do so, but I did not sell that article. I do not remember it, and it is an article that one would remember. And I never remember seeing this gentleman in the shop.

His Honour: But you cannot remember every article you have sold.

The Defendant: I remember not selling that.

Arthur Oddy, being examined, said: "I could not distinctly say that I sold that poison, but it is down in my handwriting, so I suppose I must have sold it."

His Honour: But you would put down sometimes things which Mr. Cole had sold?

Witness: Yes.

His Honour: Yes, it is obvious that that would be so. Do you say, Mr. Neumann, that the private inquiry agent is committing wilful perjury?

Mr. Neumann: I am entitled to say that there is the word of two men against that of one, and that he may be mistaken.

His Honour: It is the impression of two men against the oath of one who is trained to this matter, went there for the express purpose, and comes and says he has no doubt at all. I never place much reliance upon either myself or somebody else in regard to a matter to which their attention was not attracted at the time. How could he be mistaken about two men who are so entirely different in appearance?

Mr. Neumann: I can only suggest that he has seen the two in the shop, and is confusing them. In cases of this kind two people should go into the shop.

Mr. Dawson: You had better amend the Pharmacy Act then.

His Honour: In the fact that you admit that this article was sold in the shop at the time alleged you have the strongest confirmation of the story of the plaintiff's witness.

Mr. Neumann: But I am rebutting it with what is also strong evidence.

His Honour: The evidence of two men who come here and say "We don't remember," is the weakest kind of evidence.

Mr. Neumann went on to argue that the conflict of testimony left a doubt, and that in such cases where there was a doubt the defendant ought to have the benefit of it. The Pharmaceutical Society might have strengthened their case by having two men in at the purchasing.

His Honour said he did not know that it was a matter against Mr. Cole's character, for he believed that he was qualified, and he could not say that the trustees or anybody else was to blame, but the offence had been committed, and there would have to be judgment for the plaintiffs.

Mr. Neumann asked if his Honour would add a recommendation to his judgment to that effect.

His Honour said no doubt there would be some representative of the Pharmaceutical Society present, and they would know what was right and wrong in reference to the consequences of the judgment. He had not a sufficient understanding of the circumstances to enable him to express an opinion which was of any value. He must give the judgment and leave the Pharmaceutical Society to enforce it as they thought fit.

Sale of Food and Drugs Acts.

Spirit of Nitrous Ether.

At Brandon Police Court, on April 14, William Hildyard, chemist of Thetford and Brandon, was charged with having sold sweet spirit of nitre containing only one-seventh the official minimum proportion of ethyl nitrite. In defence, Mr. Hildyard said it was impossible to keep sweet spirit of nitre for retail up to strength, as every time the stopper was removed considerable evaporation took place. Analysts agreed that the minimum stated by the British Pharmacopœia was too high.—The Bench said they could not but find that the sample was deficient in strength, but at the same time they absolved Mr. Hildyard of any personal responsibility. As it was the first time any complaint had been made against him, they fined him the mitigated penalty of 10s. and 8s. 6d. costs.

Spirit of Nitrous Ether.

At Wootton Bassett Police Court on April 18, Frank Kempster, of Purton, was charged under the Sale of Food and Drugs Act with selling sweet spirit of nitre containing only one-seventh the amount of ethyl nitrite required by the B.P. The defendant pleaded guilty, but said he did not know that the drug had deteriorated.—The magistrates said it was not suggested that the defendant had tampered with the drug in any way, but the public did not get what they asked for. A fine of 20s. was imposed, with 17s. 6d. costs.

POISONING CASES.

Eleven deaths by poison have been reported during the past week—seven accidental cases and four suicides, thus:—

Poison.	Accident.	Suicide.
Ammonia Fumes	1	—
Arsenic	—	1
Arum maculatum	1	—
Carbolic Acid	—	2
Chloroform (anæsthetic)	3	—
Creosote	1	—
Laudanum	1	—
Strychnine	—	1

Ammonia.—The ammonia fumes were inhaled by an employé of a cold storage company at Liverpool.

Arsenic.—An irritant poison, thought to be arsenic in solution, was taken purposely by a cricket-bat maker at Chiddingstone, who subsequently attempted to drown himself before the poison took effect.

Arum.—A boy of eight died at Great Bardfield, as the result of eating some part of the *Arum maculatum*.

Carbolic Acid.—Carbolic acid was taken with suicidal intent by a clerk at New Ferry, also by a Birmingham man.

Chloroform.—The three chloroform cases were all due to the use of the compound as an anæsthetic during operations, one man succumbing thus at Bradford Infirmary, another at the Royal Albert Hospital, Devonport, and a youth of fifteen at Durham Hospital.

Creosote.—A curious case is reported from Tottenham, where an assistant to Mr. C. J. Walker, chemist and druggist, supplied an Italian with some creosote instead of castor oil, under the impression that the purchaser had asked for the poison. The castor oil was required for a child, and the Italian's pronunciation of English very imperfect. The creosote was properly labelled, but was nevertheless administered to the child by its parents, and it died shortly afterwards. At the inquest, however, a medical man, who had made a *post-mortem* examination, stated that death was due to shock, and added that he did not think the child had actually swallowed any of the creosote.

Laudanum.—Laudanum mixed with whiskey, intended for use as a dressing for an Aston man's gouty foot, was taken by his wife in mistake for her own medicine, though the poisonous mixture was properly labelled.

Strychnine.—Vermin killer containing strychnine was purposely taken by a domestic servant at Radcliffe-on-Trent.

Non-Fatal Cases.—Several cases of attempted suicide have been reported, the poisons favoured in those cases including carbolic disinfectant fluid, laudanum, and rat poison. In addition, a strange story has been published about a nurse in a Midland hospital giving marking-ink to two patients in mistake for meat juice. Fortunately emetics were administered in time to prevent fatal results.

NORTHAMPTON CHEMISTS' ASSOCIATION.

A special meeting of the Northampton Chemists' Association was held at the Black Boy Hotel, Northampton, on Friday, April 18, the President, Mr. W. D. Mayger, in the chair, to consider the

Early Closing Question.

The President expressed himself cordially in favour of closing at two o'clock on Thursday afternoon, which is early closing day in Northampton, but he said that his own way was not so clear as other members', because he had a sub-post-office for telegraph connected with his business.

The whole matter of early closing was then discussed *pro* and *con* in the most amicable spirit, and eventually every master chemist present promised to close at two o'clock on Thursdays, and at eight o'clock other days, Saturdays excepted, and the Chairman consented to wait upon absentees and ascertain their views. A resolution to this effect was moved by the President, and seconded by Mr. Armitt.—Replying to Mr. F. C. Ashford, the Chairman said that, of course, a certain amount of latitude would be granted to the chemists in the suburbs of the town. The President's resolution was then carried unanimously.—On the motion of Mr. F. C. Ashford, seconded by Mr. North, it was agreed to advertise in the Northampton newspapers announcing the names of all the firms who would close early, including those to be interviewed by the President.—On the motion of Mr. F. C. Ashford, seconded by Mr. Dennis, the President, with the assistance of Mr. Armitt and Mr. E. C. Ashford, was requested to draw up the advertisement. It was agreed that the early closing should commence on May 1.

The President spoke gratefully of the amicable feeling which had been manifested throughout, and said how glad he had been to fall in with the views of the other members. He promised the Association that the telegraphic business should not stand in the way of his closing his chemist's business at the time agreed upon, even if he had to erect a partition in his shop.—Mr. Armitt proposed, and Mr. F. Cowdery seconded, a hearty vote of thanks to the President for the handsome way in which he had complied with the hopes of the Association in their efforts to get unanimity upon the matter. The vote was carried heartily.—Mr. Armitt also alluded gratefully to the action of Mr. Dennis, Mr. F. C. Ashford, and Mr. Ingle, who were undoubtedly making sacrifices in order to fall in with the remainder of the Association. Mr. E. C. Ashford suggested that the Association hold a picnic or holiday in the summer. The idea was cordially taken up.—Mr. Flinton Harris said that if the Association went up to London, he would be delighted to arrange a river picnic from Richmond and entertain them there.

NORTH-EAST LANCASHIRE CHEMISTS' ASSOCIATION.

At a meeting held on Wednesday, April 16, Mr. W. H. Grimshaw in the chair,

Mr. W. Holt opened a discussion on

The Apprenticeship Question.

He began by moving:—

That, in the opinion of this Association, it is desirable that the chemists of this district refuse to enter into apprenticeship agreements until training conditions and results justify such contracts.

In his opinion the time has come when the question ought to be dealt with drastically. If a youth of inferior education presented himself, it became a question whether he would be able to do his duty to the chemist, to his customers, to himself or his parents, and whether it was strictly honest on their part to take him, knowing full well what was in store for him in the shape of examinations, and their inability to teach him in an adequate manner to meet those difficulties. The practice of taking apprentices before they had passed the preliminary led to many failures and tended to keep up the supply of unqualified men for the use of the limited companies, and also led to the opening of drug stores all over the country, which could not be distinguished by the public from the shops of chemists. The standard of examination was far above what was at present required in the great majority of shops. But that fact alone might not have deterred many capable men from entering the drug trade provided the Pharmaceutical Society had been able to restrict the title and practice to the qualified man. In taking apprentices at the present time chemists were aiding and abetting an absurdity, for when they had taught them to the best of their ability, and at the same time profited by their cheap labour, and when the apprentice had used his brains and spent his time and money in order to qualify, the privileges and position he held under that qualification were absurdly inadequate. He could claim no title as absolutely his own and no privilege except that a magnanimous Government would allow him to sell some twenty miserable poisons, some of which he rarely has the chance of selling, and others of which he is afraid to sell. Yet even this Poisons Schedule was in danger of being encroached upon by unqualified dealers having influence with the Poisons Committee now sitting. An unfortunate part of the business was that the apprentice was often not fully aware of his difficulties, or of the inadequate privileges conferred upon him on surmounting those difficulties, until it was too late for him to turn back to choose some other calling. The only alternative remaining to the chemist was to employ errand boys and ordinary manual labour (always taking care, of course, that the Sale of Poisons Act was duly observed), so that their obligations ended with the payment of wages for actual work done.

Mr. J. Hindle seconded the proposition. He said there was a regrettable tendency on the part of chemists to take lads with more regard to their value to themselves than to the value of apprenticeship to the boys. But out of 15,000 chemists in the country, he did not think there were two who were capable of preparing their apprentices for their examinations all through. If chemists lived for the present with an eye solely to cheap labour, well and good, but he thought they ought to have an eye to the future and encourage only efficient labour. However, seeing the difficulties which beset chemists in their profession, he did not think they could honestly encourage apprentices to enter the trade with a view to making a living.

Mr. R. Lord Gifford said the present acute state of the question arose simply and directly from the lack of inducement to follow the calling. The failure to guard against unqualified practice was the source of all their real evils. The remedy was dogged determination and constant protestation against unqualified practice, letting there be no mistake about what they meant, calling a spade a spade every time. They must let nothing hang up the issue. Temporise, compromise, and diplomatise on minor matters, but constantly insist that they had one essential grievance, an intolerable anomaly. Titles and practice must follow the high qualification. He illustrated this by reference to the last Council meeting. Their attention was drawn by the Privy Council to remarks made by Dr. Stevenson in his report pointing to the necessity of a curriculum. The President referred to this as unjust, claiming that the Council had consistently impressed upon the Government the necessity for systematic training. Again the same thing occurred in regard to carbolic acid. The Privy Council suddenly drew their attention to the necessity for scheduling. He argued from those facts that they had been too milk-and-watery—not insistent enough. They proved to him that their business was to study nobody's susceptibilities, but to insist constantly and unmistakably that they would not sit under such unjust conditions as prevailed. In a reasonable and useful condition of pharmacy he would regard apprenticeship with a considerable curriculum super-imposed as the ideal.

After other speeches the proposition was carried *nem. con.*

CHEMISTS' ASSISTANTS' ASSOCIATION.

The meeting of this Association, held on Thursday, April 17, was described in the programme as an "Exhibition and Short Paper Evening," and the proceedings were strictly in accordance with that announcement. The President, Mr. J. Wicliffe Peck, was in the chair, and there was a good attendance.

The Exhibits.

Mr. Charles Hymans showed geological microscopical specimens viewed with polarised light; Mr. H. C. T. Gardner, of the London Hospital, an apparatus designed by himself for the preparation and sterilisation of gelatin injections; Mr. S. C. G. Tweedy, of St. Bartholomew's Hospital, in addition to specimens of salt, and salt rock, which should have been exhibited at a previous meeting, had on view a specimen of the duck-billed platypus (*Platypus anatinus*), apparatus for the rapid preparation of emulsions, various hospital jars and bottles with stencil for marking labels, and several specimens of thyroid and suprarenal glands, and pituitary bodies, before and after dissection, kindly lent for the occasion by Messrs. Burroughs, Wellcome, and Company; Mr. Lownsbrough showed specimens of plant misfortunes; and Mr. Snow had what was perhaps the most interesting exhibit of the evening, viz.: a box containing thirty specimens of B.P. crystals, made by himself during his apprenticeship thirty years ago, all of which were in an excellent state of preservation. Mr. Snow stated that each of the specimens answered to the tests of the B.P. of that time, the crystals of iron salt being obtained from an old rusty nail, while those of copper salt were from the old-fashioned penny; he suggested that the apprentices of to-day would not be making bad use of their time if they prepared similar specimens. In addition to the foregoing there was on view a large assortment of photographs including some very pretty Highland scenery taken by Mr. W. Lamond Howie; also the President exhibited under the microscope various micro-organisms, as well as bacteria in different stages of culture in tubes.

The "Short Paper" part of the programme was contributed to by Messrs. Lownsbrough, Garsed, and Franklin. The former gentleman brought forward a

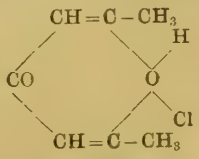
Dispensing Problem.

He said that sodium salicylate and potassium bicarbonate in solution usually gave rather a dark colour, but if made with water containing carbon dioxide such was not the case, neither was it so if hard water was used. He did not think that it was known what was the cause of the dark coloration. It might possibly be due to fungoid growth, or to some impurity in the distilled water, or it might be caused by the glass.

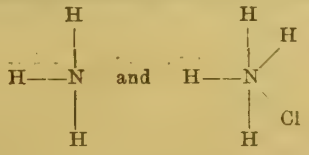
Mr. W. **Garsed** exhibited a specimen of

Dimethylpyrone Hydrochloride.

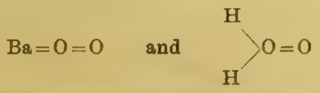
This compound, Mr. Garsed said, has the formula—



Dimethylpyrone is peculiar in that though it contains no nitrogen it has basic properties, and forms stable salts such as hydrochloride, oxalate, etc. Every chemist is familiar with nitrogenous bodies possessing basic properties, ammonia, and the alkaloids for example, and their basic properties are explained by assuming that in the salts the nitrogen which is trivalent in the bases themselves becomes pentavalent. Thus, taking ammonia and ammonium chloride, we have the formulæ—

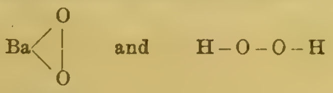


The only way in which this property can be readily explained in the case of dimethylpyrone is by assuming that in the salts, the oxygen, which is divalent in the substance itself, becomes tetravalent, as shown in the formula. The existence of this substance gives some support to the following formulæ for barium peroxide and hydrogen peroxide respectively—



$$\mathrm{Ba{=}O{=}O} \quad \text{and} \quad \overset{\mathrm{H}}{\underset{\mathrm{H}}{>}}\mathrm{O{=}O}$$

where oxygen is tetravalent, and the somewhat unstable nature of these two substances would seem to indicate that the above formulæ are more probable than the following



$$\mathrm{Ba}{<}\begin{array}{c}\mathrm{O}\\ |\\ \mathrm{O}\end{array} \quad \text{and} \quad \mathrm{H{-}O{-}O{-}H}$$

where oxygen is divalent

An Old Pharmacopœia.

Mr. **Franklin** communicated a note dealing with the pharmacy of the second edition of the 'Pharmacopœia Bateana,' including the Arcana Goddardiana—published A.D. 1691, an extremely rare volume, which illustrated in a remarkable degree the advance of pharmacy. The formulæ in this compilation were published by Mr. James Shipton, an apothecary of London, and were said to have been prescribed by Dr. George Bate, a celebrated physician who flourished in the reign of King Charles II. According to Gray, "The 'Pharmacopœia Bateana' has been a work of frequent reference from the time of its first appearance to the present day." Mr. Franklin remarked that one of the most striking features of the book was the extensive use made of the old alchemical symbols, and he went on to say that he thought a brief account of some of the preparations might be appreciated as showing what dispensers and the public might be thankful for having escaped.

The **President** having thanked those members who had contributed exhibits and papers, the meeting terminated.

SHEFFIELD PHARMACEUTICAL AND CHEMICAL SOCIETY.

At a meeting held on Wednesday, April 16, Mr. A. **Russell** Fox, F.L.S., in the chair,

Mr. J. **Austen**, President, read some

Historical Notes on Old Sheffield Druggists.

He divided the period with which he dealt into three parts—the first relating to the state of the drug trade in Sheffield prior to 1800, the second from 1800 to the formation of the Pharmaceutical Society in 1841, and the third from 1841 to the passing of the Pharmacy Act of 1868. Towards the latter end of the seventeenth century pharmacy in Sheffield was in the hands of one or two individuals. A few crude, simple drugs were sold by grocers, but at that period there would be no druggists. In 1643 there was no resident physician in Sheffield. Dr. James, the inventor of James' fever powder—a remarkably popular nostrum—practised in Sheffield a few years. Dr. Buchan, the author of a famous work on "Domestic Medicine, or the Family Physician," carried on business in Hartshead from 1760 to 1769. The first Sheffield directory, dated 1774, mentioned the names of three Sheffield druggists. One celebrated druggist of the eighteenth century was Richard Sutcliffe, who had a shop in Church Street. One of his apprentices, Hall Overend—a bust of whom stands in the Literary and Philosophical Society's room—established a school of anatomy and medicine for medical students. As it was illegal to dissect the body of anyone but a person who had been hanged, he had to resort to body-snatching for subjects, and country churchyards were laid under contribution. In 1797 there were ten druggists in Sheffield. One of them was Robert Wreakes, whose sister, Barbara Wreakes, was one of the most prolific of Sheffield writers. Early in the nineteenth century several important druggists' businesses were started in Sheffield. Mr. Austen went on to deal at some length with the careers and characters of such men as Benjamin Sykes, George Radley, William Jervis, George Hawksworth, and Joshua Gillott. In 1816 Radley opened a branch establishment in Broad Street Park. The business passed in 1822 to the grandfather of Mr. George Owen, so that that gentleman now carries on a business which has been in one family for eighty years. The founders of the Pharmaceutical Society in Sheffield were Messrs. Fred Machon, W. V. Radley, John Hill, J. M. Salisbury, R. T. Taylor, Henry Harrison, Henry Horncastle, Thomas Austen, John Smith, and Robert Fisher. Mr. Austen brought down his biographical and anecdotal sketches to a very recent period, and dealt very fully with the careers of Mr. J. T. Miller and Mr. Joseph Watts, two old members of the Sheffield Society, who have recently died.

On the motion of the **Chairman**, seconded by Mr. G. T. W. **Newsholme**, a hearty vote of thanks was accorded to Mr. Austen.

HALIFAX AND DISTRICT CHEMISTS' ASSOCIATION.

A meeting of the above Association was held at the Old Cock Hotel, on Thursday, April 17, to hear Mr. H. C. **Brierley** lecture on

The X-Rays.

The lecture was illustrated by diagrams and by a practical demonstration with a Crookes' tube and other apparatus. After the lecture songs and duets were rendered by Mr. Dixon, Mr. Thompson, Mr. Brierley, and the President.

NOTTINGHAM AND NOTTS. CHEMISTS' ASSOCIATION.

The thirty-third anniversary was celebrated at a dinner at Victoria Station Hotel on Thursday, April 17, under unusually interesting auspices, and without precedent in point of success. Mr. Richard FitzHugh, J.P., who has for many consecutive years presided over the Society, was in the chair, supported by the Mayor of the City (Councillor E. N. Elborne), Alderman Jos. Bright, J.P. (Chairman of University College Committee), Councillor A. Page, J.P., Mr. J. T. Spalding, J.P., Mr. A. E. Beilby (Vice-President of the Association), Mr. P. S. Clay (Chief Constable of the City), Mr. C. A. Bolton, and the Joint Secretaries (Mr. A. Eberlin and Mr. W. Gill).

After the loyal toasts had been proposed from the chair and musically honoured,

Dr. C. H. Cattle proposed the

Nottingham and Notts. Chemists' Association.

He said the presence of the members in such numbers showed that the Association was strong and vigorous. He hoped it would continue its good work and go on flourishing. On former occasions he had spoken of differences of usage between the medical profession and their body. Among the faculties with which men had been endowed was the faculty of enjoying themselves, and it gave him the greatest satisfaction to know that as regards that faculty there was no deterioration shown by the members of the Nottingham Chemists' Association. He considered that a society which lost the faculty of enjoying itself would be a decaying society. It was many years since they had been able to muster a medical dinner. The course of their profession and the devotion they paid to the needs of the public so interfered that they could not muster on a convivial occasion of that kind. He was very far from going to admit that as a body of scientific and practical men they were at all on the downward grade, but he was afraid that the loss of the faculty of enjoyment was the beginning of worse things. The work of the Association had been the promotion of the interests of the chemical profession. From the very first an important function had been the education of young men to take their part as chemists in the future. He was for a time associated, to a certain extent, with the teaching of young men about to be chemists; but he felt that night rather in the position of a mute at his own funeral, because his work in connection with the student had come to an end, owing to the fact that other arrangements had been made, so that their kindness in asking him to be present was due to what had been done in the past. No doubt the training of students will go on the same as it had done, and he wished that branch of the work every success. As the only medical man present, it was perhaps fitting that he should propose the toast of the Association, because of the intimate connection between the calling of the chemist and the medical profession. The doctor had often to depend upon the chemist, and harmonious working between the two crafts was most essential to the public good. He thought the public of Nottingham owed a very great deal to the skill which was shown by chemists as a body in the dispensing of prescriptions, for the accurate dispensing of medicines for the sick was by far the highest function of the chemist. He heartily wished that all doctors would give their dispensing to the chemists, and he also hoped chemists would not sell any patented or proprietary medicines. It would be better for the medical profession if these patent medicines were not kept and sold. That was not the only reason the medical profession had for discountenancing the sale of these medicines, for people got into the habit of drugging themselves until they could not do without it, and it was not good for people to be constantly doing that. On the contrary, people did themselves an immense lot of harm by taking miscellaneous stuff that they knew nothing about; and it was often very much better for the patient to withhold drugs than to press drugs upon them. Looking casually through the pages of a journal that week he noticed two articles—one "The Patent Medicine Habit," the other "The Sample Nuisance." The two things were somewhat allied; but it was not only the patient who was allured by insinuating advertisements to buy rubbish. Advertisements were put before medical men, who were expected to swallow the statements made concerning these things. When such statements were made to medical men, they could not wonder that the uneducated public were deluded by "opium cures" which contained morphine, by cures of alcoholism made up with spirit of wine, or by many narcotic preparations containing cocaine and other dangerous things. Some patent medicines, they were told on reliable authority, contained only granulated sugar, and people took them believing they were taking something of very great power to cure them. An instance of that sort of thing was the advertisement in a medical journal of a preparation called, first of all, an ethical preparation, possessing "physical characteristics and therapeutic properties far excelling all other medicines in the Materia Medica or Pharmacopœia for the relief of cough in all its forms." An ethical preparation must be something that acts upon the moral sense in such a way as valerian or cold douche to the back—things that certainly produced a moral effect. The same kind of evil came from making up of drugs in the form of lozenges and other forms resembling them. People got used to a certain preparation of tabloids and they asked for them. That was not good for the chemist or the medical man, but it was extremely bad for the patient. He met with an instance the other day where a lady was found unconscious and remained so for several days. She had overdosed herself, with the result that it was extremely bad for the institution where she was. He hoped in the future chemists would be able to live without pandering to the public taste in that respect; that respectable newspapers, like their two extremely valuable Nottingham journals, would refuse to insert advertisements of patent medicines. He also hoped that chemists would refuse to stock them. The prescription of anything in the tablet form might be reduced to the minimum, that patients as far as possible should be treated with an eight-ounce mixture, and that medicines outside of the Pharmacopœia should be discountenanced and disregarded by doctors as well as by chemists.

Mr. W. Gill, in responding, said they had hoped to have present Mr. Newsholme, the President of the Pharmaceutical Society, as well as Mr. C. B. Allen, the Vice-President, but unfortunately they were unable to come. He had also just received a wire from Bristol from Mr. Mason, and a letter from Councillor S. Cook, both regretting their inability to be present. In spite of the fact that the chief occupation of the Chemists' Association was gone, it was still in a flourishing condition. Although they had had to give up their active work in connection with education, they still had an influence over it, and hoped to renew their education work among the young men who aspired to become pharmacists. There was a hoary tradition that the chemist existed simply and solely for the benefit of the public, and the public certainly thought so, whether the chemist did or not. There was an educational work for their Society to do in connection with the Pharmaceutical Society, in teaching the rank and file of chemists what the latter Society could do and could not do. There seemed to be great misunderstanding on that point. Next should be placed the Sale of Food and Drugs Act, one of the best friends the chemist and druggist had. The gatherings of the local Society from time to time did a great and good work by bringing under the notice of the members new things which came out, to which he thought even a little more time might be given.

Mr. A. E. Beilby proposed

The Mayor, Magistrates, and Corporation.

Nottingham, he said, had been fortunate in having at the head of affairs men able to see the right course to take. In the matter of the municipalisation of undertakings for the public good Nottingham was in the front of any city in the Kingdom. He would gladly see other developments, and amongst them a better position for the pharmacists of the city. The Mayor, he added, was the representative of civil freedom.

The Mayor said they all appreciated the extent to which *aqua pura* entered into the business of the chemist. He congratulated the Society upon having an ample and pure supply of water, and he had no doubt that it was a very profitable business. The magistrates had butcher, baker, and grocer before them from time to time for various offences, but he did not think they had the chemist on a charge of adulteration. He believed that University College was not appreciated in the city as it ought to be. There were opportunities to study there in theory and practice such as could not be picked up in ordinary business, and he commended the college to the young men connected with the chemists of the city. What the Corporation tried to do was to try to make the town grow as fast as possible. At the same time it tried to keep the rates down, although they did not prevent people from grumbling. It was no joke to be a member of the City Council. Probably a great many of the members gave more time to the work of the Council than was generally thought, and their services ought to be highly appreciated. If the public did not entirely agree with them, they ought at least to give them credit for what they did.

Ald. Bright, in responding, said he was glad to know that the Chemists' Association was in such a robust condition. It was in the interests of the public that such societies existed. Never had University College been more successful than it was at the present time; he was sure there was every disposition on the part of the authorities of the college to co-operate with the chemists to advance their status. University College did not exist for the benefit of any particular society or class, but for the ratepayers of Nottingham generally; if the college did not render help which, in the opinion of the officials of the Association, it might do, he hoped ways and means would be found on their part, as well as on the part of the authorities of the college, to accomplish that desirable result.

Councillor Page having also replied,

Mr. C. A. Bolton gave the toast of

The Visitors,

which was suitably acknowledged by the Chief Constable.

Mr. E. Gascoyne, in submitting the

Pharmaceutical Society of Great Britain,

said there was one aspect of the Pharmaceutical Society which he had never seen referred to, and that was its relation to the public. He was quite sure that very few outside their own calling understood the functions of the Pharmaceutical Society and the part it played in the economy of their every-day life. Yet it was no doubt a fact that the public of this country were very deeply indebted to the Society, for when Parliament decided some thirty-four years ago that for the public benefit and safety persons carrying on the calling of chemists and druggists should be qualified, the Pharmaceutical Society was fixed upon to conduct the examinations, and had continued that work with ever-increasing stringency, involving considerable study and expense; so that it was impossible to get young men to take up the calling; and as the apprentice of to-day was the chemist of to-morrow, there was a remote possibility—and perhaps not very remote—that in course of time their calling would become as extinct as dodo. He hoped that those who lived to see that day would shed a tear upon the departing chemist and realise what they had lost. Other duties that the Pharmaceutical Society performed included the carrying out of the Pharmacy Act—seeing that no one dispensed poisons who was not duly qualified. He was sorry these things did not redound very much to the advantage of the chemist. What the Society had done was a somewhat debatable point, for as the chemist's attainments had gone up his profits had gone down. But whatever the Society did for chemists, it played a most useful and beneficent part in the economy of the every-day life of the public.

Mr. F. R. Sergeant, the local representative of the Pharmaceutical Society, in replying to the toast, said one point in connection with the Society often lost sight of was the prosecutions of what he might call the hangers-on, the parasites of the profession who, not qualified themselves, struggled in odd corners to take away from others that part of their living which was their honest right. There had been two such cases in Nottingham during the last month, in which the offenders had paid fines for misdemeanour. North of the Tweed doctors kept open shops, which had been carried on by unqualified assistants. The Society had put its foot down upon that, with the result that the General Medical Council had issued a decree that such conduct would be considered unprofessional. That was a good thing for their brother chemists in the north. And certainly these prosecutions helped them in the legitimate part of their calling. The educational work of the Society had often been criticised before that audience. They were told that the Society made their examinations stiffer, and yet the chemists got no benefit from it. But they had to work a long time for a good thing before they got it, and they would become professional men as soon as the public realised that they were sufficiently educated to take the standing of professional men. The dual nature of their craft made a difficulty in legislation, but he believed the future would see the chemist a much more professional man than he had been in the past; he ought to be educated so as to be able to cope with any question that came before him. In the matter of analysing, for example, the chemist to-day did not do a tithe of what he would be required to do in the future. There was one aspect of the work of the Pharmaceutical Society which all were agreed upon, and that was the work of the Benevolent Fund. He trusted the Society would live and progress, and be the means of doing more for chemists than it had done in the past.

Mr. A. Eberlin proposed

The Chairman,

a toast which, he was sure, would meet with a hearty and unanimous response. He could quite conceive that there were toasts which might not meet with the hearty approval of everyone present, but as to their most worthy President they would all be agreed, and he should be failing in his duty if he did not say how highly every gentleman present appreciated Mr. FitzHugh as a man, as a citizen, and as their President. He was as competent as most people belonging to the Association to propose this toast, because for the past eight or nine years he had been their Secretary, and in that capacity he had had occasion to know Mr. FitzHugh most intimately as President of their Association; and he could tell them that his duties as Secretary had been very materially lightened and made more pleasant by the kindness and consideration which Mr. FitzHugh had at all times given to him.

Mr. FitzHugh, who was cordially received, said he had received so much kindness at their hands, that it was quite unnecessary that the toast should be proposed on that occasion, but he sincerely thanked them for the kind manner in which they had received it. Many years had passed since he was first elected as their President, and presided at that festive board—although he might say, perhaps with sorrow, that he was the oldest chemist in the town—he hoped he might be spared many years to preside over them. As long as he was able to do so he should continue to take the deepest interest in the Nottingham and Notts. Chemists' Association. It had afforded him—although it had been at times some trouble and anxiety—great pleasure to see the young men around him who had derived great benefit from the Association, and he hoped youngsters in the future would receive the same benefit. Their Association had been pointed to many times as the leader of provincial associations in the country, and he hoped they would never lose the respect which other chemists of the kingdom had given to them.

During the evening a most enjoyable programme of music was given by the Cecilia Glee Quartette and Mr. A. Clarke, and during dinner a string band played selections.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION.

The members of the Bradford and District Chemists' Association assembled on Tuesday, April 22, at the Café Royal, with a number of guests to a total of forty-five, for the purpose of their fifth annual dinner. The **President** of the Society (Mr. Arthur Hanson) occupied the chair, and amongst those on his immediate right and left were:—Alderman J. Harrison, of Sunderland, Mr. F. C. Long (Leeds), Mr. R. Broadhead (Dewsbury), Mr. A. R. Tomlin (Barnsley), Mr. R. C. Walshaw (Huddersfield), Mr. W. Pollard (Wakefield), Mr. G. Dixon, and Mr. W. R. Black (Halifax), Ald. Dunn, Mr. A. H. Waddington, Mr. R. W. Silson, and Mr. F. A. Wilcock (Hon. Secretary).

The loyal toasts were honoured with musical accompaniment, and Mr. **Tomlin** proposed the toast of the

Bradford and District Chemists' Association,

which had originally been associated with the name of the Mayor of Bradford, who, however, was unable to be present. Mr. Tomlin expressed the regret which all felt at the absence of Mr. Newsholme, who had also been expected to be present, and said he felt that the Council of the Pharmaceutical Society was all the better for that gentleman's influence and for its closer touch with Yorkshire generally.

Mr. F. A. **Wilcock**, in responding, referred to the steady progress which had been made by the Bradford Society, and expressed himself in favour of the proposed federation of West Riding Societies as something which would be greatly to the benefit of Yorkshire, and do no harm to the national body.

Alderman **Dunn** then proposed the toast of the

Pharmaceutical Society.

Whilst admitting the excellence of the work which the Society had done, and congratulating it upon recent departures from traditions which had made the provincial members feel that they were at a decided disadvantage by comparison with the London members, he expressed the hope that there would soon be proportional representation of the provinces on the Council, and that means would be taken to restrict the sale of all potent medicines to qualified men.

Alderman **Harrison**, in responding to the toast, said that he wished to say a few words about the new Pharmacy Bill. They in Bradford seemed inclined to depart from the principles of the Act of 1868, whereas the Council of the Pharmaceutical Society wished to give these a wider and more perfect application. That Act laid down the principle that no person should assume the title of chemist and druggist or deal in poisons unless he was qualified under the Act of Parliament. They in Bradford were rather inclined to extend that principle, so that all medicines should be sold only by persons who were enrolled upon the Pharmaceutical Register. He did not think that Parliament would listen to any such step as that. The cry of pharmacy for the pharmacists was a fine cry enough, but it was not a practical cry. The Council did in the Bill try to go a step further than they had gone in the Act of 1868. In that Act the monopoly of the qualified pharmacist was confined to the selling of poisons such as were found upon the schedule, but in the new Bill they were going a step further in asking that the dispensing of physicians' prescriptions should be confined to the registered man. In that they were taking a wise and practical step, for there was nothing more likely to commend itself to the judgment of those who were called upon to pass judgment upon such matters than that medicines of such potent character as were now prescribed by physicians should naturally be placed only in the hands of men properly trained and qualified for the carrying out of such work. Although it might be said that this was a small matter by comparison with the sum total of the drugs which they should have in their hands he could assure them that it was in reality an important matter. He hoped that as time went on, and there was more enlightenment in regard to the potent character of the drugs dispensed to-day, it would be seen that such progress had been made that one who might have been a thoroughly qualified man for the work of thirty years ago, would be likely to be hopelessly at sea if placed behind their counters to-day. He quite differed from the conclusion that they in Bradford had arrived at that the present was not an opportune time to take up the question of a curriculum. He believed that if the chemist and druggist was to hold his own, and to be in a position in which he might look for a further extension of powers from Parliament he must be thoroughly qualified to ask for that extension of powers. How was the Act of 1868 brought about? There had been a singularly large series of poisoning cases, some the result of accident, some of ignorance, and some of crime, and the one fact which stood out clearly above all others was that it was not expedient in the interests of the public safety that potent medicines, poisons, and drugs should be placed in the hands of incompetent people, therefore when Parliament was urged by pressure from all parts of the kingdom to protect the public against the ignorance and incompetence of people who were conducting the business in these things Parliament recognised that this was a fair step, and, looking round, found that through the action of the Pharmaceutical Society there was ready to hand a body of men ready and competent to take up the work. In a similar way when Parliament could be brought to recognise that it was good for the safety of the public that the selling of potent medicines should be in the hands of qualified men that body would look again to the Pharmaceutical Society and see that those who had undergone a curriculum and passed the examinations of the Society, and been placed upon its Register, were competent and proper persons to be entrusted with these responsible duties. He fully believed that this was one of the instances in which it would be found that history repeated itself, and therefore it was that he urged the value of the curriculum. He thanked them for the handsome way in which the toast had been received, and wished them to understand that so far from deprecating criticism he regarded the criticism of intelligent constituencies as of the utmost value to the Society.

Other toasts which were honoured were "The West Riding Associations," proposed by Mr. **Harrison**, and responded to by Mr. **Dixon** and Mr. **Broadhead**; "The City and Trade of Bradford," proposed by Mr. F. C. **Long** and responded to by Mr. **Silson**; and "The Visitors," proposed by Mr. D. S. **Priestley**, and responded to by Mr. W. **Pollard**. The intervals between the speeches were most pleasantly filled in with music rendered by Mr. Bailes and Mr. Sol Taylor, and a clever ventriloquial sketch by Mr. H. G. Dutton.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

ANATOMY OF TODEA.

A. C. Seward and S. O. Ford have communicated to the Linnean Society a paper on the anatomy of *Todea*, with notes on the affinity and geological history of the Osmundaceæ. The main points were (1) the investigation of the anatomical structure of *Todea* as represented by *T. barbara* and two of the filmy species, *T. superba* and *T. hymenophylloides*, with a view to a comparison with that of *Osmunda*; (2) a summary of the geological history of the Osmundaceæ and Osmundaceous characters; and (3) the question of the interpretation of the stelar structures of *Osmunda* and *Todea*. *Todea barbara* agrees in most respects with *Osmunda regalis* in anatomical features; in *T. superba* and *T. hymenophylloides* the protoxylem is mesarch, and occasionally almost exarch. In *T. hymenophylloides* the authors found an inner endodermis in the stem, characterised by its sporadic manner of occurrence; in the seedling stem no trace of an inner endodermis was detected. The authors expressed themselves in favour of regarding the stele of the Osmundaceæ as a medullated monostele.

BENZYLIDENE-CAMPHOROXIME.

M. O. Forster states that benzylidenecamphoroxime, $C_{17}H_{21}ON$, dissolves sparingly in boiling alcohol, and crystallises in transparent hexagonal prisms, melting at 197°; for a 2 per cent. solution in chloroform, $[\alpha]_D = +389°$. The benzoyl derivative crystallises from petroleum in lustrous, well-formed prisms, and melts at 106-107°; for a 2 per cent. solution in chloroform, $[\alpha]_D = +246°$. The phenylcarbamate separates from alcohol in tufts of long, silky needles, and melts at 169°, when it evolves gas; a 2 per cent. solution in chloroform has $[\alpha]_D = +275°$. Nitrous acid converts benzylidenecamphoroxime into the compound, $C_{17}H_{20}O_2N_2$, which melts at 117°, and gives Liebermann's reaction. Attempts to convert the oxime into benzylidenecampholenonitrile by the agency of boiling sulphuric acid (25 per cent.) have been unsuccessful, but acetyl chloride gives rise to a nitrile which is unsaturated, and feebly lævorotatory. The oxime is indifferent towards sodium amalgam, which reduces benzylidenecamphor to benzylcamphor, but sodium in boiling amyl alcohol reduces it to bases which probably represent the α-benzyl derivatives of bornylamine and nebornylamine; the platinichloride from the dextrorotatory hydrochloride melts at 235°, whilst the platinichloride from the lævorotatory hydrochloride melts at 247°.—*Proc. Chem. Soc.*, **18**, 90.

LEMON OIL ALDEHYDES.

H. von Soden and W. Rojahn state besides citral, lemon oil contains nonyl-aldehyde, and probably octyl-aldehyde. These are obtained, after removing the citral by means of Na_2SO_3 and $NaHCO_3$, as recommended by Tiemann, and distilling the residue oil *in vacuo*. The distillate is then shaken with $NaHSO_3$ solution; the resulting aldehyde compounds are decomposed with soda, and the liberated aldehydes fractionated. The fraction boiling at 185-190° C. gives with semi-carbazide two semi-carbazones, which are separable by fractional crystallisation into two distinct fractions. The larger of these melts at 89·5° C., the fusing point of nonyl-aldehyde semi-carbazone, the smaller crop melts at 72° C., and is probably octyl-aldehyde semi-carbazone. The aldehyde described by Burgess is probably impure nonyl-aldehyde. The "new" fluorescent body of that author, which melts at 145° C., is the citroptene of Crismer.—*Berichte*, **34**, 2,809.

ALLEGED SYNTHESIS OF PILOCARPINE.

The alleged synthesis of pilocarpine by Hardy and Calmels in 1887 by the action of trimethylamine on β-pyridine-a-bromopropionic acid has been doubted by several observers, more especially since the constitution of pilocarpine has been shown by Jowett and by Pinner and Kohlhammer to be different to that ascribed to it by Hardy and Calmels. Dr. Karl Feist in a communication from the laboratory of Professor E. Schmidt at Marburg has carried the investigation further by ascertaining the action of trimethylamine on a simpler derivative of pyridine, namely, α-picolin, and from the results obtained, which showed that a betaine was not produced, he concludes that Hardy and Calmels could not have synthesised pilocarpine in the manner described by them.—*Archiv der Pharm.*, **240**, 178.

BROMES AND THEIR RUST-FUNGUS.

Professor Marshall Ward, F.R.S., has for some time been investigating the conditions of infection of the brome grasses by the uredo-form of the rust fungus (*Puccinia dispersa*). He found that a brome of the same species as the diseased plant will take infection readily, whereas an allied species would not suffer so severely, or may be in no danger of taking the disease at all. Infection and incubation require a period of about ten days. Another interesting result of these experiments seems to furnish fairly definite proof that seeds do not *intra se* transmit disease. The method adopted was to sterilise seeds from infected plants. These were then germinated in tubes closed by cotton wool plugs which permitted free aeration, while preventing the introduction of spores; also means were devised for providing pure nutritive materials for the growing plants. Under these conditions the plants raised showed no trace of disease.—*Trans. of Brit. Mycol. Soc.*, 1900-01.

ORIGIN OF THE SEED HABIT.

One characteristic of the *Spermaphyta*, is that these plants reach the embryonic stage while the seed is contained in the carpel or sporophyll. Dr. Scott, F.R.S., has found megaspores or seeds attached to the sporophylls in a fossil *Lycopod*; the seeds contained prothalli and very probably embryos had been formed (Royal Society, *Phil. Trans.*, 1901). About the same time Miss Lyon has recorded that *Selaginella rupestris* may develop an embryo before the spores are shed from the strobilus (*Bot. Gazette*, September, 1901). The interest of the latter discovery lies in the fact that this plant grows under somewhat abnormal conditions, and it suggests that a seed-like habit may have originated as the result of season and environment acting upon the nascent capabilities of the plant.

GALL-MAKING CYNIPID FLY IN JAMAICA.

T. D. A. Cockerell points out that the Hymenopterous gall-makers of the family Cynipidæ, though widely distributed over the earth, have seemed to be totally absent from the West Indies, somewhat to the astonishment of entomologists. Some years ago, however, he received a gall on *Bidens reptans* collected at Cinchona, Jamaica. The gall was a large oblong swelling attached to the stem of the plant, and contained many cells. Unfortunately he was not able to breed the flies, but he secured some immature fragments, which sufficed to show that they were Cynipidæ, probably belonging to the genus *Aulax*, or some allied genus. Although it is impossible to determine the species, he thinks it is desirable to call attention to the occurrence of this gall-maker in Jamaica, and suggests that some West Indian reader may be able to supply complete information.—*Nature*, **65**, 561.

CANNABIS INDICA.

BY C. R. MARSHALL.

Professor of Materia Medica and Therapeutics at University College, Dundee.

In the issues of the *Pharmaceutical Journal* for April 5 and April 12 two letters appear which touch upon the active principle of this drug and the cause of its loss of activity. Mr. Merson's letter, it is true, is simply a legitimate defence to the attack made on his paper by Mr. Maben the week previously, but he seems to change his ground by acknowledging that "the records published concerning what is really the active constituents are, as Mr. Maben shows, inconclusive." In his interesting paper (*P.J.*, March 22, p. 235), he had stated, I believe rightly, that "it is generally conceded that its therapeutic value lies in the resin or resins present." Mr. Maben doubts that, and says he is "not aware that is generally conceded"; his belief is "that there is no general consensus of opinion one way or the other." Then he goes on to say, "if the resin be the active principle, how is the fact to be accounted for that the drug deteriorates with age?" That can, I think, be easily explained. But before entering on that matter, which I regard as the most important one to pharmacists, I should like to say a few words regarding the more recent investigations on the subject of the active principle of Indian hemp. Its history I have dealt with fully elsewhere (*Lancet*, January 23, 1897, p. 235).

I think the active principle is undoubtedly of a resinous nature, meaning by that term a non-crystalline substance insoluble in water, but soluble to some extent in alkalies, in terpenes, and organic solvents generally. It is not alkaloidal. Although alkaloids have been isolated in small quantities by numerous investigators (Preobraschensky, Siebold and Bradbury, Hay, Denzel, Warden and Waddell, H. F. Smith, Hooper—of whose paper I was unaware—mentioned by Mr. Maben, and, most recently, Marino-Zuco and Vignolo), none of them have been found to possess the peculiar physiological action of Indian hemp. The most recent workers, Wood, Spivey, and Easterfield (*Trans. Chem. Soc.*, 1896, p. 539; *ibid.*, 1899, p. 20), working with the most active natural product—charas—failed to find any alkaloid whatsoever. But from this substance, by distillation of the ether extract under diminished pressure (270°-290° C. under 20-60 mm. Hg pressure), they isolated a transparent brownish resinous substance (b.p. 265°-270° C. under 20 mm. pressure—31·5 per cent. yield) which they termed "cannabinol"; it produced marked cannabis intoxication in doses of 1½ grains. This substance was further broken up into two bodies, and a number of derivatives of it were prepared; but for information on that point I must refer readers to their papers. The important question to pharmacists, as I have said, is the cause of the loss of activity, and that has, I think, been proved in a very simple manner. Perhaps it will be best explained by abstracting a part of a paper of mine—a copy of which I shall be glad to send to anyone interested in the matter—read before the American Medical Association in June, 1898.

"What first drew my attention to the matter was the gradual darkening which cannabinol underwent when left exposed to the air in a test-tube; the darkening commenced on the surface and gradually extended downward; the superficial layers being affected rapidly, the deeper layers very slowly. In order to determine whether this was due to oxidation, and whether, in consequence, the activity was affected, oxygen was slowly passed through cannabinol kept fluid by immersion in a sulphuric acid bath at 150 to 160° C. The material rapidly darkened, and the consistency increased. After passing the oxygen through for six hours the activity was found to be decidedly less. It was then bubbled through for thirteen hours more, the temperature toward the end of the experiment being raised to 185° C. in order to keep the substance fluid. On cooling, the substance set to a hard, brittle mass, exactly resembling pitch in appearance. No loss or gain of weight, within the limits of experimental error, occurred. This pitchy material, given in the solid form, possessed scarcely any action, but this, in part, was due to the lessened solubility and a higher melting-point, for, if previously dissolved in oil, a distinct, though comparatively slight effect was obtained. Dr. Easterfield, who has made all the analyses in connection with the charas research, kindly undertook one of the oxidised cannabinol. The percentages obtained, compared with those of cannabinol, were:—

Calculated for $C_{18}H_{24}O_2$ (cannabinol)	Found.	Calculated for $C_{18}H_{22}O_3$
C = 79·4	C = 77·7	C = 75·0
H = 8·8	H = 7·5	H = 8·3

"The product obtained was therefore not completely oxidised, and the activity it retained was in all probability due to unchanged cannabinol. As a control experiment carbon dioxide was passed through a similar sample of cannabinol similarly treated. Very slight darkening, probably owing to slight admixture with air, occurred, but there was no increase in consistency. Only a slight diminution in activity was observed. The influence of temperature was tried. Cannabinol distilled at 400° C. under atmospheric pressure was found to be slightly less active than cannabinol distilled at 265° C. under 20 mm. Hg pressure, but when the substance was heated in sealed tubes at 220 to 260° C. for twenty-four hours, no very great loss of activity occurred, although this was distinct. As slight oxidation may have resulted during the process, the influence of temperature *per se* may be disregarded. The action of aqueous vapour has not been determined. It would therefore seem as if the loss of activity of Indian hemp was due to oxidation of the active ingredient. The terpenes, like other members of this class, readily oxidise, and this, doubtless, exerts some effect in the deterioration of the crude drug. The obvious remedy is to keep cannabis preparations in air-tight vessels until they can be used. For practical purposes a well-corked bottle seems to be sufficiently protective, but hermetically sealed packages, especially for transport purposes, are to be preferred. In sealed tubes we have kept cannabinol for seventeen months without the slightest change. [Now, after five and a-quarter years no physical change in the cannabinol is apparent. Its physiological action has not recently been tried.—C. R. M.] The limitation of the oxidation to the superficial layers probably explains many of the accidents occurring in practice. If the preparation has been long in stock and imperfectly protected, these may have become comparatively inert, and scarcely any effect may be produced by their use, while a renewal of the prescription from deeper parts—or the substitution of a more recent preparation—may produce very marked effects. I am certain that the accidental administration of superficial and deep layers of cannabinol will explain some discrepancies in my own results, which previously were inexplicable."

Cocculus Indicus as an Anti-Convulsive.—Planat has found a strong tincture of the fruits of *Anamirta cocculus*, obtained by macerating powdered cocculus indicus, 1, in alcohol, 90 per cent., 5, for three weeks and filtering, very useful as a sedative in the treatment of nervous diseases. The initial dose is 2 drops before meals, gradually increased by a drop at a time, until 20 or 30 drops are taken. Hambursin administers it, in certain cases, in larger doses, commencing with 10 drops night and morning, increasing the dose by 2 drops until 40 are taken, then further increasing the quantity 10 drops per month until 100 drops is reached. Huchard deprecates the use of these large doses, which he considers to be dangerous.—*L'Union Pharm.*, **43**, 19, after *Gaz. hebdom. de Méd.*

THE CHEMISTRY OF CANNABIS INDICA.

BY JOHN HUMPHREY.

The hemp plant, *Cannabis sativa*, Linné (N.O. Urticaceæ), is an annual diœcious herb which acquires marked narcotic properties when grown in tropical countries, the effects being most pronounced in the case of female plants cultivated in India, where the dried and crushed leaves are known as "bhang" and the compressed flowering tops as "ganja." The leaves and bracts bear yellow glands containing a resinous secretion, the exudation of which renders them viscid to the touch. During the preparation of the flowering tops to form "ganja," part of the dried resinous exudation is said to separate in the form of a greyish powder, which is collected and mixed with an extract of the plant to make a preparation called "charas," used for smoking. The best "charas," however, is prepared by collecting the resinous exudation from the flowering tops and packing it in bags, an oily resinous mass being produced as the powder gradually consolidates. There are several varieties of "ganja," the best being produced in Bengal and consisting of the dried and compressed flowering tops of female plants which have not been been fertilised, great care being taken to remove all male plants before there is any chance of fertilisation being effected, since it has been found that the secretion of resin is increased if the formation of seed be prevented. The drug—Bombay ganja—official in the British Pharmacopœia, under the name of Cannabis Indica, or Indian hemp, may consist of either flowering or fruiting tops, and is frequently of very inferior quality, since fruiting tops yield less resin—the constituent which has been considered the most important part of the drug—than flowering tops in which the development of seed has been prevented. In addition to the resin, the only important constituent of Indian hemp appears to be a volatile oil which occurs in small proportion, though several investigators have recorded the presence of alkaloidal matter in the drug.

ALKALOIDAL MATTER.

The first announcement of the discovery of an alkaloid in hemp was made by Preobraschensky (*Pharm. Zeit. f. Russland*, 1876, p. 705), who obtained from "haschisch"—a kind of confection made from Indian hemp—a volatile alkaloid, apparently identical with nicotine, which he believed to be the active principle of the drug; but it appears probable that the "haschisch" which he examined contained a certain proportion of tobacco. Later, Siebold and Bradbury (*Pharm. Journ.* [3], **12**, 326) gave the name cannabinine to an uncrystallisable volatile alkaloid, somewhat resembling coniine, which they obtained from "pure" Indian hemp, and Dr. Hay (*Pharm. Journ.* [3], **13**, 998) arrived at the conclusion that the drug contained several alkaloids, one of which he named tetano-cannabine, because it resembled strychnine in its action. Denzel (*Pharm. Centralhalle*, 1885, p. 540) also reported the presence of a tetanising alkaloid, but Warden and Weddell (*Pharm. Journ.* [3], **15**, 574) were unable to obtain any such base, though they found indications of a nicotine-like principle in an oil obtained by destructive distillation of a freshly-prepared alcoholic extract of Indian hemp. The base was not identical with nicotine, however, and Kennedy (*Pharm. Journ.* [3], **17**, 453) subsequently confirmed the presence in the drug of an alkaloid which differed from nicotine. Still later, H. F. Smith (*Amer. Journ. Pharm.*, 1891, 386) confirmed the results of Siebold and Bradbury, by separating from Indian hemp a coniine-like base, while Marino-Zuco and Vignolo (*Pharm. Journ.* [4], **1**, 519) also obtained from the drug a substance of alkaloidal nature. But Jahns (*Pharm. Journ.* [3], **17**, 1049) had previously detected the presence of choline in Indian hemp, and pointed out that this base, or a decomposition product thereof, was probably what some previous investigators had found. Choline or bilineurine is trimethyl-ethylol ammonium hydroxide, a strong base which crystallises with difficulty and is not uncommon in plants. By the action of caustic alkalies, as in the process employed by Siebold and Bradbury for the extraction of "cannabinine," choline can be converted into trimethylamine, which also occurs naturally in several plants, and there appears to be good reason for the belief that the various substances of alkaloidal nature obtained at different times from Indian hemp may have consisted of choline or some decomposition product, such as trimethylamine, in a more or less impure condition. Certainly the presence of no distinctive alkaloid has yet been proved in Indian hemp, and it is noteworthy that the most recent investigators—Wood, Spivey, and Easterfield—failed to obtain any alkaloid whatever from "charas."

VOLATILE OIL.

The volatile oil of Indian hemp, as obtained by Personne (*Journ. de Pharm. et de Chim.* [3], **31**, 46), congealed at 12°-15° C., and consisted of two hydrocarbons—cannabene, $C_{18}H_{20}$, and cannabene hydride, C_6H_{14}, the former being a liquid boiling at 235°-240°, while its supposed hydride, which probably consisted of paraffin, crystallised from alcohol in scales. Personne (1857) was of opinion that cannabene was the active principle of Indian hemp, and the effects produced by it, as described by him, were similar to those which had been recorded in 1840, by Bohlig, as having been produced by an oil of which he obtained 0·3 per cent. from the fresh herb. Subsequently, Valente (*Journ. Chem. Soc.* (Abst.), **40**, 284) found that an oil (s.g. 0·9292) obtained from *Cannabis sativa* grown in Italy consisted chiefly of a sesquiterpene, $C_{15}H_{24}$; it boiled at 256°-258° and yielded nothing resembling the solid hydrocarbon mentioned by Personne. Still later, Vignolo (*Journ. Chem. Soc.* (Abst.), **68** [i.], 623) obtained an oil which boiled between 248° and 268°, and yielded a sesquiterpene, $C_{15}H_{24}$, which boiled at 256° and left a stearopten behind when distilled over sodium. Vignolo was of opinion that the cannabene obtained by Personne was a mixture, and that opinion was confirmed on purifying it, when it appeared to be identical with the sesquiterpene, $C_{15}H_{24}$, obtained by Valente from ordinary hemp. Finally, Schimmel and Co. (*Bericht*, 1895, p. 57) obtained, by distillation of the nonflowering herb, 0·1 per cent. of a mobile oil (s.g. 0·932) with a narcotic odour; but Roux (*Bull. Gén. de Thérap.*, 1886, p. 492) had previously proved, by experiments on animals, that the volatile oil obtained from Indian hemp is inactive, and no satisfactory evidence to the contrary has yet been brought forward.

RESIN.

The resin, which constitutes the greater part of "charas" of good quality, was first separated from Indian hemp in a state of comparative purity by T. and H. Smith (*P.J.* [1], **6**, 127 and 171), who named it cannabin.* As prepared by them, it was a soft, brown, neutral resin, soluble in alcohol or ether, insoluble in water or weak alcohol, and capable of producing powerful narcotic effects in doses of two-thirds of a grain.

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* Merck (*Pharm. Journ.* [3], **13**, 1052) described a preparation obtained by combining cannabin, a glucoside supposed to exist in Indian hemp, with tannic acid, and Bombelon (*Pharm. Journ.* [3], **14**, 966) claimed to have obtained the pure glucoside by decomposing the tannate; but the supposed glucoside, which was described as a greenish-brown powder, probably consisted chiefly of resin. The name "cannabinon" (*Pharm. Journ.* [3], **17**, 685) was subsequently applied to the resin of Indian hemp, from which the supposed tetanising alkaloid had been removed by treatment with tannic acid, and Leib Lapin (1894) proposed the name "cannabindon" for a similar resinous substance, prepared by a process of fractional precipitation from an ethereal extract of the plant.

A resin obtained by Martius (*N. Rep. f. Pharm.*, **4**, 529) was also soluble in alcohol or ether, as well as in volatile oils; it fused at 68° C. and dissolved with difficulty in aqueous alkalies or in acids. By treatment with nitric acid, Bolas and Francis (*Chem. News*, **24**, 77) converted the resin of Indian hemp into oxycannabin, $C_{11}H_{11}NO_4$, a substance forming yellow needles which melted at 176° C., and Dunstan and Henry (*Proc. Chem. Soc.*, 1898, p. 44) have since obtained the same substance from "charas." It is a nitro-lactone and, when quite pure, occurs in colourless needles (m.p. 182° C.) which are insoluble in water, but dissolve in hot alcohol and crystallise out again on cooling. A substance to which the name cannabindon, $C_8H_{12}O$, was applied by Kobert (*Chem. Zeit.*, 1894, 741) resembled the resin of Indian hemp in narcotic power and in being soluble in alcohol, ether, or oils; but it was a dark red, syrupy liquid and, apparently, similar to the "cannabinol" originally obtained from "charas" by Wood, Spivey, and Easterfield (*Journ. Chem. Soc.*, **69** [i.], 539). Those workers obtained from "charas" a terpene (b.p. 160°-180° C.), a sesquiterpene (b.p. 258°-259° C.), a crystalline paraffin, $C_{29}H_{60}$, melting at 63°-64° C., and 33 per cent. of a toxic red oil (b.p. 265° C.), with the formula $C_{18}H_{24}O_2$, to which they gave the name cannabinol, the last-mentioned constituent being regarded by them as the only active constituent of the resin. It was soluble in alcohol, ether, benzene, glacial acetic acid, and organic solvents generally. The same red oil was found to constitute a large proportion of various pharmaceutical preparations of Indian hemp, and Dr. C. R. Marshall showed that it was extremely active, the symptoms produced by it being those peculiar to Cannabis Indica and not possessed by the terpenes or any other product of "charas."

Cannabinol.

Further investigation of the red oil or crude cannabinol by Wood, Spivey, and Easterfield (*Journ. Chem. Soc.*, **75**, 20) proved that it was a mixture of at least two compounds having similar physical characters, and the name cannabinol has been retained for the only one of those compounds which has yet been isolated. The crude cannabinol obtained by fractionating an alcoholic "charas" extract, under diminished pressure, yielded a yellow crystalline substance—trinitro-cannabinol, $C_{21}H_{23}N_3O_8$—when treated with nitric acid under certain conditions. The trinitro-cannabinol was readily reduced by boiling with hydriodic acid and phosphorus, yielding the hydriodide of a base which has not yet been isolated, owing to the readiness with which it oxidises. As the formula $C_{21}H_{23}N_3O_8$ represents the trinitro-derivative of a compound with the formula $C_{21}H_{26}O_2$, the presence in crude cannabinol of a body having the latter formula appeared probable, and its existence was definitely proved by the isolation of an acetyl derivative—$C_{21}H_{25}O_2 \cdot C_2H_3O$—from the red oil or crude cannabinol. The latter sets to a sticky, semi-solid, odourless mass when cooled below 60°, but pure cannabinol, $C_{21}H_{26}O_2$, obtained by distillation of an ether extract under diminished pressure, is an almost colourless oil which sets, on cooling, to a transparent brownish resin. This pure cannabinol, when administered in very small doses, produces the toxic symptoms characteristic of Indian hemp, and there appears little reason to doubt that it is the active principle of the drug. Further, Dr. C. R. Marshall has shown, in a paper* read before the American Medical Association, that the activity of cannabinol diminishes as the substance becomes oxidised by exposure to the air, so that—if, as appears extremely probable, cannabinol is the active principle of the Indian hemp—it is obviously desirable to protect the drug and its preparations from the action of the air as much as possible. This accords with Dr. Prain's observation (see *P.J. ante*, p. 342) that "ganja" does not keep; the deterioration of the drug being normally so rapid that its potency diminishes to one-fourth within twelve months, while "ganja" two years old is practically inert. The facts recorded by Dr. Marshall also seem to afford an explanation of the conflicting results obtained by different investigators, since the samples of Indian hemp or resin examined on various occasions probably differed as much in composition and potency as they doubtless did in age and physical characters.

Summary and Conclusions.

To sum up, Indian hemp appears to contain no peculiar alkaloid, but the drug may yield a certain proportion of choline (biiineurine) or some decomposition product of that base, such as trimethylamine, formed during the process of extraction. The drug also contains a little volatile oil which consists chiefly of a sesquiterpene (cannabene) and paraffin, but the chief constituent of Indian hemp is apparently the resin (cannabin) of which "charas" mainly consists, and of which cannabinol is the active principle. Finally, since cannabinol, on exposure to the air, becomes oxidised and loses its potency, the loss of activity of Indian hemp and its preparations would also appear to be due to that cause. Hence, it seems desirable that Indian hemp used in medicine should be obtained as fresh as possible, and that, as suggested by Dr. Marshall, the drug and its preparations should be preserved in hermetically sealed packages if they are to be kept for any considerable length of time before use.

THE TRAINING OF APPRENTICES.*

BY J. G. WALLBRIDGE.

I fear that the subject which I have selected has been spoken about and written upon *ad nauseam*, but my apology for still further prolonging the discussion is that the selection was made some months ago. I intend to speak about the training of apprentices in a very broad way, and I hope you will pardon me if I go wide of the title of my paper at times to more fully illustrate my remarks. I do not intend by any means to map out an ideal apprenticeship, for that has been done many a time by those more capable than myself. My thoughts are to bear on the average middle-class youth who has to be apprenticed in the average chemist's shop, for I may say that the title "chemist's shop" will convey better what I mean than the title "pharmacy." The latter are so very few, in the real sense of the word, and the public are accustomed to associate with the chemist's shop the sale of a hundred and one different articles by no means pharmaceutical. Let me take you in mind for a few brief moments over the various pharmaceutical establishments we see, say, in this city, or in any of the surrounding towns; of course, we omit our own pharmacies from consideration; they are ideal places, where we never handle a pound of charcoal for laundry purposes, or hardly know the smell of paraffin oil. None of us keep chemist's shops, of course! Well, what is our impression, judging from the outside, for Shakespeare says: "The apparel oft proclaims the man." In the shop window at one place we may see a display of one of the many advertised proprietary soaps, with fancy ribbons and all the paraphernalia of a miniature bazaar. Another we see set out with perfumery and toilet articles, which is a little less like a bazaar. Another with photographic goods. Yet, alas! many another with bottles unpolished, remote cobwebs, empty patent medicine cartoons and show cards; anyway, I hope we never have a youth who has been "brought up" in any such. If I may allude to some of the higher-class pharmacies (pardon me, I don't want to hurt your feelings, gentlemen) what do we see here? In some, perhaps, only the specie jars and a few sponges, or a few rows of packed pharmaceutical preparations such as Gregory powder, extract. cascaræ liq., spirit. sal volatile, etc., etc. These gentlemen don't push cough mixtures, liver syrups, corn cures, kidney pills, etc., as they, being the "cream of the profession," have the support of all the medical men they can get! Many of us would gladly follow their example, but, unfortunately or otherwise, we have to eat to live, and I fear our appetites would want considerable reducing if we carried out our ideal. The place where the apprentice under consideration has to be trained is one stocked with many things, but where the owner is a trained scientific man holding as a "hall mark" the diploma of the Pharmaceutical Society; I don't now allude to the Major diploma. In proportion as the individual has acted up to his diploma, so proportionately will he be able to teach his apprentices.

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* An extract from the paper referred to is published by Dr. Marshall in this week's issue of the Journal, at page 362.—[Ed. *P. J.*]

* Read before the Liverpool Chemists' Association on Thursday, April 24, 1902.

Class of Master.—It certainly will make a vast difference to a youth what class of master he is under. It is by no means the only advantage that the master be a fortune hunter, although I think we might omit this class, for, work hard as we may as chemists and druggists, we need not fear being overburdened with this world's goods. The master, if possible, should be one with a love of teaching, and one who has kept himself well read in the details of his calling; certainly one who at any time could do credit to his qualification, and, at least, know the salient points of any of the subjects upon which he was examined. He should be endowed with a fair amount of patience, and with a strict sense of justice, but yet be able to command implicit obedience. I need not say that he should be temperate, and an abstainer from bad language, but I daresay none of us are addicted to this latter.

Class of Youth.—For my part I prefer the boy educated in a National or Board school, who has had twelve months to two years' polish at one of the many higher grade or grammar schools, with teaching in Latin, French, mathematics, and chemistry. Then the youth could sit for one of the several University examinations before leaving school.

Deletion of Preliminary.—I think the Pharmaceutical Society was unwise in deleting the Preliminary First Examination, and believe the vast majority are agreed upon this point. Increase the extent, of course, but still let us have a preliminary of our own at present; add French or German (optional), Euclid, and algebra to the old subjects. Of course, the acceptance of the other various examination certificates to remain as formerly. As an inducement that such an examination should be passed early in the youth's career, let him be debarred from sitting for the next examination until a space of three years has elapsed. As to the division of the Minor Examination I entirely agree with Dr. Symes's suggestions. In my own case I practically acted upon it, in one sense, for, at eighteen years of age, I went through the Apothecaries' Hall Dispensers' Examination, which was of such advantage that before nineteen years of age I was one of the two selected candidates for the post of first dispenser to the Stanley Hospital, that certificate being necessary. Now, respecting division of examination, several will discuss this freely, and we shall be pleased to hear Mr. Cowley's remarks, who has had experience of training candidates for examination. Don't let us say that the examination be divided and called first half and second half, but two portions to be called Preliminary and Final. Primary to include (1) Chemistry; (2) prescription reading; (3) botany; final to include Dispensing, pharmacy (practical and theoretical), materia medica. I will explain why I suggest this order of subjects. Each of the first two subjects are, so to speak, continuous with school studies, while botany, if not taken up at school, would be an interesting addition to the pupil's educational programme. I may say here that each master ought to be able—and take sufficient interest in any youth entrusted to his care—to suggest the best books, and to help his apprentice to step into the arena of his technical studies. Masters have been heard of who suggested that an apprentice be set to write out a wholesale drug price list, or to commit the B.P. to heart.

Term of Apprenticeship. I would suggest as the most suitable length of time four years, if the "Arts Examination" has been passed before apprenticeship. A system of registration of apprentices should be adopted, apart from the established custom of the Pharmaceutical Society; that the indentures be endorsed at headquarters by the Society. An apprentice would then be able to sit for the primary portion of the qualifying examination at the end of three years, and his fourth year could be clearly devoted to purely technical studies. The compression of information necessary for the present examination is too great, and its result is not good to the candidates; even in its best sense it is almost necessary to cram for it. The time, I think, is not opportune as yet for a compulsory curriculum, however good it might be.

Why Do Employers Take Apprentices?—This is a question that has several answers. The chief reason is a cheap form of labour, to which there can be no objection, provided a master conscientiously does his duty to the best of his ability. Although a cheap form of labour, it entails responsibility, for after a year or so of service a youth is trusted to perform many duties that require more than average care and attention. It is here that sometimes a little knowledge has proved to be dangerous. Have not such youths mistaken mag. sulph. for zinci sulph., or pot. iodid. for pot. bromid., or pot. bicarb. for pot. bitart., etc.? The risk of such mistakes is much lessened if the training has been good even at that stage.

Why Are Youths Apprenticed?—The weighty consideration of thousands of parents who have sons is: What shall we do with our boys? I don't propose to go into that question except as it appertains to pharmacy. I will leave out of consideration the chemists' own sons. We have frequently heard that the chemist's used to be considered a "nice clean business"; also that one is a professional gentleman, or, as some thought, "half a doctor." But the chief reason for any calling is as a means of a livelihood. I maintain that our business does afford that quite in proportion to any other business. We certainly don't amass great fortunes, but we could always be certain of a living, though it might be of a very mediocre kind. Now as regards pharmacy as a means of a livelihood, I must add the proviso that one must get qualified, and I say that qualification pays, even as assistant. Take the average unqualified assistant. Of mature years, his average wage is about 35s. per week at the outside. The qualified man can obtain, in proportion to his ability, an average of 60s. per week, *i.e.*, 25s. per week more, which is, roughly, £65 per year. Now if a youth has spent on his purely scholastic technical training £120, this means an annual return on his investment for life at the rate of over 50 per cent., and we know that a large majority spend nothing like that sum on obtaining their diploma. That should show both to apprentices and masters that from the commencement qualification should be kept in view.

I can't suggest how to get apprentices. That difficulty we all have to face. Suppose a boy's indentures have been signed for four years we cannot do better than instil the cleaning and tidying habit at the start, carrying out the good maxims, "A right place for everything, and everything in its place," etc. The boy should be taught to be a keen observer, making "mental" notes often, for it is the accumulation of little facts that is required to turn out the exact and model chemist and druggist. Let me here call your attention to the words quoted by a speaker in one of last year's addresses:—

> Think nothing trifling, though it small appears,
> Sands make the mountains, moments make the years,
> And trifles life.

We really cannot explain much technically until the boy has been with us for, say, some six months, has taken his turn at dusting the shop rounds many a time, has learned that tinct. camph. co. means paregoric, that it is light brown in colour, has a pleasant smell which he recognises as aniseed; that cupri sulph. is blue, and that ferri sulph. is green. During a few moments of each day we could whet the observing appetite of the youth by various comments upon the articles he has frequently handled. We might tell him why the name copperas is applied, that dragon's blood is not the blood of the dragon, but the product of the vegetable kingdom. Even before that stage he might have been keeping up his knowledge of Latin by declining in full magnesii sulphas, spiritus chloroformi, tinctur. belladonnæ, with observations on the special declensions to which each word belongs, for many candidates trip on spiritus, and little points of Latin grammar. They could be set to write fully the declension of such irregular words as calomel, aloes, enema, etc., etc. During the early stage also a youth should be shown the use of the label-damper, twine-box, sealing-wax, etc., etc.—points that seem nothing in themselves, but are of considerable importance, since the improper use of any might go far to impress any examiner or master subsequently. Such apparently small trifles are really an essential part of the foundation of the future chemist and druggist. A youth should be trained in exactitude from the commencement, thinking nothing too small to be beneath his notice. Make these little habits a part of his nature, so that he could hardly lick a label if paid to do so, or to break a piece of string without scissors or knife, or to shake a bottle up without a cork; then in the examination room, or when he comes to dispense in a good pharmacy he will have plenty of time to give thought to the more technical considerations. By explaining to a boy what these little points mean when he faces an examiner he will be encouraged not to overlook any of them.

Chemistry.—We can suggest that he perform every experiment for himself and make his own notes, offering to assist him by our catechisms and explanations when difficulties occur. The vivid impression made by observation of experiments hardly ever dies away, whereas book knowledge may be transient.

Botany.—We can treat similarly, assisting the youth at times by demonstration of plants, at the microscope, asking him points which he has studied, encouraging him to mount specimens of herbs, etc., with full descriptions attached.

Prescription Reading.—We should occasionally set an apprentice (say in the second year) to write out prescriptions in our own prescription book in the opposite language to what they appear therein, with particular attention to full Latin and good penmanship. The directions might even be written on an imaginary label without any ruled lines. Occasionally the master might take a prescription and go over it in this manner. (That would be later on in his career.) Take the opening sign—℞. What does it mean? its part of speech; word or words it governs, etc. Magnesii sulphatis—How is it made; its tests and dose. What does the ʒi. sign mean—480 grs. or 437½? Do we find apothecaries' ounce stated in B.P.? Acid. sulph. dil.—The proportion of acid; how could you estimate, etc.? Syrup. zingiberis.—Its strength, how made, etc. Previous to this he could have gradually waded through the first portion of Pereira's 'Selecta e Prescriptis.'

Materia Medica.—This can be made a specially interesting subject to an apprentice in his second or third year, for the chief points can be brought daily under his notice. A habitat map might be fixed up somewhere in the back shop, so that during a few spare moments it could be referred to; the youth might be permitted to attach a label to the side of each drug drawer, stating the nat. order, botanical name, P.B. preparations, and active principles; to be used similarly to the map. As for the drugs not found in any particular pharmacy, it is not an expensive investment for a master to obtain a small collection.

Pharmacy.—Every master ought, at least, to be able to give his apprentice some clear and precise definition of an emulsion, a pill, a plaster, meaning of percolation, boiling points, distillation, and take the trouble to practically illustrate the same. How many youths have ever used a percolator or still? But the process can easily be shown at a small cost, with improvised utensils if necessary. The youth should be encouraged to make a small quantity of almost every P.B. preparation, even though at his own cost. The lack of practical study no doubt causes many a failure in the examination room. The containers of the scheduled poisons might bear a label stating if in Part I. or Part II. of the Schedule. The strength and dose of the preparation might also be marked.

Dispensing.—This all-important subject is difficult to deal with, since the average chemist has so few prescriptions, and those usually of a very ordinary character. My plan is to resort to dummy prescriptions. Supposing we occasionally supply copaiba mixture; then let our apprentice make an 8 oz. bottle, and, if satisfactory, put on one side. Let this be repeated as soon as this one be sold, and if we have no demand for some pills or any mixture of the "tricky" class, well, let the youth make samples and throw them away afterwards—the cost can't be much. But in every case mind that each bottle or package is finished off exactly as in an examination room—labels trimmed, mixtures measured, powders weighed separately, the pills weighed when finished and compared with the quantity of ingredients used, strict cleanliness, remembering that "time is taken into account in awarding marks."

Photographic.—If we deal in photographic goods at all, we could encourage our apprentice to take up this branch, but that in this case he acted conscientiously that all materials used should be brought under our notice, and we could either give or supply at cost price. During some leisure we could explain a little of the why and wherefore, optical and chemical, of the various processes. In this case we should be mutually repaid by his intelligent explanation at some time of any difficulties our customers might meet with.

I have found it necessary to omit many things in going over the individual subjects, especially detailed description of ordinary shop work, but I have said sufficient to show that an apprentice may be very well trained in a very ordinary chemist's shop. Let us encourage interest in the youth from the beginning, and let him have an optimistic opinion of the calling he has entered; remembering that it is by laying brick upon brick that his store of knowledge should be built.

A three months' polish up, after a proper apprenticeship, with study from Mr. Cowley, would cause all the terrors of the examination room to vanish; our friend, Mr. Marsden, and his colleagues would then be viewed by candidates through entirely different spectacles.

AMYLOFORM FOR NASAL CATARRH.—According to Lepa, a snuff composed of equal parts of amyloform and rice starch, used frequently, will rapidly cut short the course of a nasal catarrh. It is specially useful for those whose mucous membrane is easily inflamed. [It should prove a useful remedy in hay fever.]—*Pharm. Zeit.*, **47**, 181.

PRACTICAL NOTES AND FORMULÆ.

Bourget's Liniment for Influenza.

Bourget prescribes the following liniment for the treatment of influenza, the patient being kept in bed and rubbed on the chest and back with it. Salicylic acid, 4; methyl salicylate, 10; eucalyptus oil, 5; sage oil, 3; oil of mace, 5; camphorated oil, 30; spirit of juniper, 120. It is prescribed as "linimentum salicylatum aromaticum."—*Pharm. Centralh.*, **43**, 174, after *Therap. Monats.*

Preparation of Syr. Pruni Virg., B.P.

F. W. Flett refers to the instability of this preparation which he considers to be due to the presence of ferments. He has prepared a most satisfactory syrup of B.P. strength, by a different method, which is as follows:—Macerate wild cherry bark (ground for percolation), 3 oz., in a menstruum composed of glycerin, $1\frac{1}{4}$ part, and distilled water, $7\frac{3}{4}$ parts, and percolate until the desired quantity is obtained. The sugar is dissolved in the liquid by percolation, adding distilled water to the percolator until twenty fluid ounces are obtained. The resulting syrup answers the requirements of the B.P. as regards density, flavour, keeping qualities, and physiological effect, providing that a good quality bark is used and care exercised in the manipulation.—*Canadian Pharm. Journ.*, **35**, 264.

Shaving Paste.

An emulsion of hard paraffin (m.p. 55° C.), has been recommended by E. White (*St. Thomas's Hospital Gazette*) as a satisfactory shaving paste, specially suitable for surgical purposes. It is prepared with 25 per cent. of paraffin and 2 per cent. of tragacanth, the wax being melted and mixed with the tragacanth, previously made into a mucilage with some of the water. The addition of a little stearin or lard renders the emulsification of the wax easier, for some reason which cannot readily be explained, while about 10 per cent. of alcohol makes the preparation more agreeable to use. The fatty odour may be covered by the addition of a half to 1 per per cent. of lavender oil, and the finished product then appears as a thick white cream. In use a small quantity is rubbed over the area to be shaved, and the razor immediately applied. As the water evaporates the particles of wax previously distributed in the emulsion become coherent, and fill up the depressions in the surface of the skin from which the hairs arise, thus forming a mechanical support during the passage of the razor. The quantity required is very small, one ounce being sufficient for shaving the face about six times.

LETTERS TO THE EDITOR.

Poisoning by Lead in Pills.

In reference to the recent correspondence in your columns on this subject, I beg to state that instances in my analytical practice enable me to endorse the purport of the same; furthermore, I beg to quote the following remarks of the Medical Officer of Health of this City, taken from his last annual report (1901):—"The use of diachylon plaster for illegal purposes is becoming a common practice, three cases having come under my particular notice, and I think the attention of the Home Office should be drawn to this matter. Very serious illness has resulted, and I am certainly of opinion that the sale of diachylon plaster in bulk should be restricted, by making it a drug scheduled under the Poisons Act. The publicity thus attaching to the purchase would, I believe, act as a wholesome deterrent."

Peterborough, April 28, 1902. WILLIAM ELBORNE.

The Apprenticeship Question.

I have often read with pleasure and profit your editorial articles in the *Pharmaceutical Journal*, and it was, therefore, with considerable interest I commenced to-day to peruse the one in this week's issue on the apprentice question. I fail altogether, however, to discover the logic of the arguments therein. You say "a youth is expected to earn money as early as possible after leaving school. . . . and his parents or guardians fail to see why he should not earn as much if apprenticed to a chemist and druggist as if he were doing the work of a clerk or errand boy. The chemist who sees matters in a similar light is not likely to experience any difficulty in securing apprentices." Just so. The difficulty, however, remains, as it would be impossible to find a chemist willing to take an apprentice or pupil on the same terms as those made with a light porter. "Both times and manners change," you say, and you remind us chemists, dull and stupid as we are, that we "must recognise that fact as clearly as other people." But even that rapacious individual who figures so prominently in your imagination, the chemist on the prowl for "prey" in the way of "cheap labour," would scarcely wish to rid himself of every obligation whatever to teach his apprentice anything, and that wideawake parent or guardian to whom you refer as being so anxious nowadays for a youth to begin to earn money would probably be anxious also that in an apprenticeship indenture there be some mention of the business art or vacation the youth is to be taught, so that your suggestion of an embryo chemist's apprenticeship indenture, becoming nothing more than a mere hiring agreement in which "labour" on the one part and "wage" on the other are the only factors, is also, I hope, out of the question. I admit the Pharmaceutical Society is not to blame, and that, as you say, the difficulty is probably exaggerated; but I submit, with all confidence, that, speaking generally, chemists are not on the look-out for cheap labour. A novice, especially in a pharmacy, entails at least considerable trouble and some anxiety, as probably we ourselves did. Moreover, most chemists' manufactures and processes are many of them somewhat of a proprietary character, and although manners and times have changed, and nowadays a chemist is called upon for a good deal, we are not called upon to incur this trouble, and to initiate an outsider into all the mysteries of our daily avocation without a fair return. Chemists are still able and willing to teach and instruct apprentices in the art and mystery of an honourable, intellectual, and skilled calling, and parents and guardians have, as a rule, sufficient self-respect not to beg such instruction on behalf of their charge, or expect it without a reasonable, just, and proper consideration therefor.

Sheffield, April 25, 1902. JOHN H. BRADWALL.

Council Election, 1902.

I desire to express my acknowledgments for the large and generous support accorded to me in my former candidature for a seat on the Pharmaceutical Council, for which I have again been nominated. My views on matters of general pharmaceutical policy have been so frequently expressed that I feel it unnecessary to enter into detail. I shall, however, if elected, do my utmost to support and promote legislative or administrative proposals calculated to protect the interests of all registered and qualified persons. While not claiming at present the position of a standard-bearer in the fight of qualified chemists against unqualified trading companies, I can, at least, point to a long and varied experience in administrative public work, as well as in various branches of the business not confined entirely to my present locality. I consider it most essential that the Act of 1868 should be firmly enforced and administered; that personal qualification, as demanded by that Act, should ensure personal protection in return; that a limited trading company consisting of unqualified shareholders should be liable to the same penalties and restrictions as any other unqualified person; that poisons, potent drugs, or medicines should only be obtainable of or dispensed by legally qualified and registered persons, the actual and responsible owners of their establishments; that protection of title and declaration of ownership of pharmacies should be secured. I should strongly support the division of the Minor Examination, considering it in the interests of employers, employees, and the public, independently of an amended Pharmacy Act, which at present appears remote. Any proposal calculated to extend the usefulness of the Society in its broadest and widest sense should have my warmest support, as I believe that the Society should be thoroughly representative of the whole body of chemists throughout the kingdom. If its membership were largely augmented the Council would be able to speak in no uncertain tone on all demands for legislative protection and reform, which it is stated is not now the position.

Cambridge, April 28, 1902. A. Sidney Campkin.

Mr. H. W. Colley offers advice to members of the Society, as to the exercise of their voting power, which does not seem to be suitable for publication in the Society's Journal. The Editor also suggests that the question which Mr. Colley desires to have answered by candidates for election as members of the Council is one which would be most appropriately addressed to each candidate individually by letter.

The Acetic Acid Test for Oil of Turpentine.

During the discussion on Mr. Dunlop's paper on the above subject at the last evening meeting, Mr. Hill hinted that Mr. McDiarmid and I might have got results, the very opposite of what we did get, had we allowed the two liquids to remain in contact for a few minutes. In the report of his remarks which he has sent to the Journal he goes even further by stating: "From experience he could say that while a sample appeared at first to dissolve, it would separate if allowed to stand for a short time." In ordinary language, this means that the evidence of everyone who has got results confirmatory of the accuracy of the B.P. test must be put aside as valueless, because if they had allowed the liquids to stand for a short time separation would have taken place in every case. "A short time" is rather indefinite, but in order to test this statement two samples of oil of turpentine, one commercial, the other rectified, were mixed with equal volumes of glacial acetic acid of standard strength, and placed in the back shop away from direct sunlight, the test glasses being left uncovered. The thermometer indicated a temperature of 52° F. (11·1° C.). At the end of one hour the solutions were still clear and no appearance of separation. The glasses were then transferred to the window of the front shop, where they would receive direct sunlight. At the end of two hours' exposure in the window they were examined. The thermometer had risen to 58° F. (14·4° C.), and the solutions were found to be in the same condition as before. They were now re-transferred to the back shop. At the end of three-quarters of an hour the solutions were still clear, and the thermometer had fallen to 53° F. (11·6° C.). On examining them, however, a quarter of an hour later separation had commenced, that is four hours after the liquids were mixed. These experiments do not bear out Mr. Hill's assertion that the solutions would have separated in a few minutes if I had left them standing for that period. When he gives us, in minutes and seconds, his definition of "a short time" it will be seen whether his after-thought is any more accurate.

Edinburgh, April 28, 1902. W. Lyon.

Solubility of Turpentine in Glacial Acetic Acid.

In reply to Mr. Dunlop's remark on the article appearing in the 'Companion' under the heading "Solubility," I wish to state that the range of temperature there given applies to the whole of the paragraph, as one would naturally expect.

London, April 30, 1902. P. W. Squire.

Citrine Ointment.

Although Mr. Maben has sent you some remarks upon my short note on citrine ointment, it is difficult to believe that he has taken the trouble to read it. Had he done so he must have noticed (1) that his figures published (*P.J.*, 1897 [ii.], 223) as expressing "free nitric acid" did not do so, but represented total acid, which, of course, alters the case altogether; (2) that an ointment prepared according to B.P., 1898, was more acid than one prepared by the "Squire process," which is also at variance with his statements. The specimens were shown at the meeting as being of interest from the point of view of their age, but so far as the process is concerned, it is, with one or two exceptions, generally admitted to be better and to give more uniform results than that of the B.P., 1898.

London, April 30, 1902. P. W. Squire.

Bromidia.

As agents for Messrs. Battle and Co.'s bromidia, we think it only right to offer a little explanation on the subject of the exceptional conditions under which the late Mr. Geoghegan is supposed to have become possessed of an entire bottle of Bromidia. This preparation is not a "secret remedy," as the formula is published in all the pamphlets that have been issued to the medical profession for nearly twenty years. Bromidia is not a "popular remedy," and not intended to be supplied to the public at all; it is a pharmaceutical preparation put up in ¼lb. and ¾lb. bottles only, and intended to be used solely for dispensing purposes. No circular or other printed matter accompanies the bottle, and beyond the plain bromidia label and a label giving the dose there is no indication of its use. Every bottle is wrapped in a plain piece of paper bearing the imprint "¼lb. Bromidia; Battle and Co.," and a label-notice printed in red ink indicating that the preparation is supplied unstamped by the authorisation of the Inland Revenue for dispensing purposes only, and that, in the event of any part of it being sold to the public, it must be stamped in accordance with the value, and must be labelled "Poison," with name and address of the vendor.

London, April 29, 1902. Roberts and Co.

⁂ The "authorisation of the Inland Revenue," of course, relates only to liability to stamp duty and not in any way to the medicinal use of any article to which it applies.—[Ed. *P.J.*]

Division of the Qualifying Examination.

Division of the Minor Examination, in my opinion, would only result in a few years in flooding the trade with cheap labour, with considerable diminution of the present rate of wages. This division idea is all very well from an employer's point of view, finding difficulty in procuring cheap labour, and probably objecting to pay the not over-exorbitant salary of £2 per week. From the arguments put forth from time to time by interested persons, one would think that nearly every chemist is brimming over with sympathy for the "rejected" of the Minor, when the foundation of his interest is really cheap labour. The Minor Examination at present is a very reasonable one, and anyone possessed of average ability ought not to experience much difficulty in passing it. I have passed the examination myself within the last two years, and think I am capable of giving an opinion of the severity of it. The fundamental law of Nature, of the survival of the fittest, must apply even to "examinees," and any proposed easy method for weaklings to acquire the qualification should be opposed tooth and nail. The remedy for the present dearth of labour is to be found in increased facilities for study, with shorter hours of labour, and I have not the slightest doubt that a remedy for the existing state of affairs would then be found. I should be glad to see someone with a more facile pen take up this subject, which is a matter of great importance to the craft generally.

April 29, 1902. "NO DIVISION" (132/33).

Assistants' and Dispensers' Salaries.

My attention has been forcibly directed to the matter of the salaries of chemists' assistants and dispensers in public institutions by a paragraph in the daily newspapers to the effect that a certain Board of Guardians, being desirous of appointing a dispenser, offered as salary £80 per annum. The only qualified applicant for the post was a London lady. A communication was read from a Liverpool chemist, who thought the Board was offering the wages of a dock labourer, and suggesting that the addition of a "1" before the eight would make a salary compatible with the position and responsibility. The advertisement pages of the Journal reveals an even more startling state of affairs. One institution advertises for a male qualified dispenser, possessing Major or Minor qualification, who is to be recompensed to the extent of £53 per annum. Another requires dispenser, salary £70 per annum; applications, diplomas, and testimonials to Hon. Secretary, etc. This might be intended for humour of the dry species; but as these places get filled up it is evidently terrible truth. Judging, then, from the rate of wages paid, the craft has sunk, in the estimation of the public at least, to the level of the hodmen, dock labourers and scavengers, and a shade below the status of bricklayers or miners. Is the public only to be blamed for that poor appreciation? Nay. I think we must take home to ourselves the blame for being thus meanly thought of. If ever we hope to see a better state of things, we must work out our own salvation. If qualified men would refuse to take situations with stores (where wages are nowadays higher) legitimate employers would be able to suitably recompense assistants. Situations in institutions where salaries are meagre and the only attraction is rather shorter hours, should also be shunned. A chemists' assistants' union might surely accomplish that and, thus, raise salaries all round so as to create a better state of affairs generally. A regular report might also appear in the Journal, as previously advocated by a Scotch gentleman, showing the amount of salary paid in different parts of Britain. Above all, let us get rid of the canker of selfishness and jealousy which appears to be more firmly rooted in chemists than in any other class of men. Every man appears to be grinding his own axe, sharpening knives to cut his neighbour's throat, though what we want is working together for the common good of the craft, which would, in the long run, benefit individuals more, financially, socially and otherwise, than any plotting or beggar-my-neighbour scheming for selfish aggrandisement.

April 28, 1902. "MANCUNIENSIS" (132/14).

The Proposed Tax on Cheques.

Do the majority of chemists and druggists have a banking account? If so, why? I see no advantage except safety. Do any ordinary chemists draw three cheques a week? Is the safety worth the extra 3d.? Is it likely a man would pay, say, a £3 account by cheque if he had so much cash in his drawer? Imagine a druggist, after paying current accounts, rent, and domestic expenses, hoarding coin.

Sheffield, April 28, 1902. WILLIAM WING.

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply.

NIEMEYER'S LINIMENT (A. W.—73/9).—We have been unable to trace the formula for this preparation.

OPIUM PREPARATIONS (D. C.—73/11).—The water is used to extract the soluble matters in the drug.

CAPSULE FOR DOG (D. L.—73/3).—It contains oil of cassia or cinnamon, oil of turpentine, and probably liquid extract of male fern.

TEETHING POWDER WITHOUT CALOMEL, ETC. (H. N.—72/34).—(1) Ammonium bromide, 1 grain; powdered jalap, 3 grains; powdered sugar, 6 grains. (2) Potassium chlorate, 1 grain; heavy magnesium carbonate, 10 grains.

THE TITLE "PHARMACIST" (S. H. H.—73/5).—By the Pharmacy Act, 1868, with the provisions of which you—as a registered chemist—ought to be familiar, the use of the title "pharmacist" is restricted to duly registered pharmaceutical chemists.

LABELLING POWDERS (G. W.—73/8).—We cannot suggest any way in which you can comply with the strict requirements of the law, except by labelling the powders as provided by Part 2 of the Poisons Schedule. You can, of course, leave matters as they are, and take the risk—probably a very slight one—which the former proprietor seems to have taken. But you must exercise your own discretion on that point.

MEMBERSHIP OF SOCIETIES (A. M.—73/4).—In order to become a Fellow of the Chemical Society you must be elected after submitting a certificate signed by five or more Fellows, of whom at least three must certify their recommendation from personal knowledge. Write to the Assistant-Secretary of the Society, Burlington House, Piccadilly, London, W., for the necessary form. Membership of the Society of Public Analysts is restricted to those who are engaged in the "profession of analytical chemistry," and a candidate must be recommended by not less than four members, of whom three at least must testify from personal knowledge to his "scientific and social fitness." Write for further particulars to the Hon. Secretary of the Society, Mr. E. J. Bevan, 4, New Court, Lincoln's Inn, London, W.C.

GOLDEN HAIR DYE (J. A. H.—72/32).—We fear it is not possible to restore the hair to the exact tint of its former natural colour. As you state, hydrogen peroxide will not colour grey hair golden, but will reduce the tint of brown hair to a shade that will pass as such. Then the restriction imposed, that the application shall not stain the scalp, puts most of the true dyes out of court. Probably this, however, is more a matter of care in application than anything else. Possibly a very weak solution of chrysoidine applied frequently would answer. It is very important that the hair should be quite free from all grease before dyeing it. This is best effected by washing the head with soap and water containing a little solution of ammonia.

A SUGGESTION AS TO REVISION OF THE POISON SCHEDULE.

Under present conditions pharmacists frequently experience embarrassment from the fact that strict compliance with statutory requirements, as defined in the Poison Schedule, now involves inconsistency of practice in regard to several preparations that are included in different parts of the Schedule, though, from the point of view of poisonous potency, there is no corresponding difference or similarity between them. The following tabular statement shows the relative potency of some preparations which come within one or other part of the Schedule when considered simply as poisons; it also shows that the qualified pharmacist can, if he choose to do so, freely and lawfully retail to any person preparations that are in the second part of the Schedule, though they are much more poisonous than some of those, in Part I., which, according to modern usage, are in frequent demand as medicines. An arrangement which admits of the nux vomica preparations mentioned below being sold as articles in Part II. of the Schedule and not as preparations of strychnine, while the more stringent regulations for articles in Part I. have to be observed in regard to the two syrups containing much smaller amounts of strychnine, obviously requires revision.

IN PART I.

Tincture of aconite	Dose, 5 to 15 minims.
Arsenical solution	Strength, 1 per cent.
Iron and arsenic capsules	About 1/30 grain in each.
Begbie's mixture	Strength about 1 per cent. HCy.
Brompton cough mixture	Strength about 1 per cent. HCy.
Chlorodyne cough mixture	About ⅓ to ½ of 1 per cent.
Solution of atropine	Strength, 1 per cent.
Solution of strychnine hydrochloride	Strength, 1 per cent.
Easton's syrup	Strength, 0·057 per cent.
Compound syrup of hypophosphites	Strength, 0·011 per cent.
Morphine hydrochloride	
Corrosive sublimate	

IN PART II.

Chloral hydrate	Dose, 5 to 20 grains.
Chloroform	Dose, 1 to 5 minims.
Liquid extract of belladonna	Strength, 0·75 per cent.
Tincture of belladonna	Strength, 0·05 per cent.
Liniment of belladonna	Strength. 0·37 per cent.
Alcoholic extract of belladonna	Strength, 1·0 per cent.
Tincture of nux vomica	Strength, 0·25 per cent.
Extract of nux vomica	Strength, 5·00 per cent.
Liquid extract of nux vomica	Strength, 1·50 per cent.
Tincture of opium	Strength, 0·75 per cent.
Extract of opium	Strength, 20·00 per cent.
Liquid extract of opium	Strength, 0·75 per cent.
Morphine solutions (official)	Strength, 1·00 per cent.
Preparations of morphine	Of any strength.
Preparations of $HgCl_2$	Of any strength.

A member of the Society, in sending these remarks for publication, has also drawn up the following suggested amendment of the Poison Schedule, more as affording material for reflection and as a basis for discussion than as a definite proposal for altering the authoritative Schedule. Registration of sales under the proposed Part II. is thought to be advisable as a precautionary measure and as a ready means of tracing purchasers and sellers of poison when such a course became necessary. The transfer of corrosive sublimates and cyanides to that part of the Schedule would give greater facility for registered chemists to meet legitimate demands of amateur photographers for supplies of those articles. That arrangement would throw more responsibility upon the chemist, since in case of mishap he must bear the onus of proving that he took every possible means of satisfying himself that the purchaser was a proper person to be supplied and that he was duly warned as to the necessity of exercising care in the use of the articles.

PART I.

Regulations as presently applying to Part I.

Aconite—root and leaves.
Arsenic.
Ergot of rye.
Opium.
Hydrocyanic acid.
Savin and its oil.
Cantharides.
Strychnine.
Morphine.
Aconitine.
Atropine.
Cocaine.
And other poisonous alkaloids, as well as their salts.
Any preparation of the articles above named other than those mentioned in Parts II. and III.

PART II.

To be labelled "Poison," with name and adddress of seller, also register to be kept of buyer's name and address, purpose for which poison is required, quantity sold, and date of sale.

Corrosive sublimate.
Potassium cyanide and other poisonous cyanides.
Tartar emetic.
Chloral hydrate.
Chloroform.
Solutions of cocaine (or any of its salts, not exceeding 10 per cent. in strength or one-eighth of an ounce in quantity).
Mixtures containing the official hydrocyanic acid, not exceeding 8 fluid ounces in quantity, or 2 per cent. in strength.
All B.P. preparations (except those mentioned in Parts I. and III.) of—
Aconite.
Strychnine.
Arsenic.
Corrosive sublimate.
Belladonna.
Hydrocyanic acid.
Nux vomica (or of official alkaloids, as well as other preparations of the above articles, containing a smaller amount of the poison than the strongest B.P. preparation of it).

PART III.

Conditions as at present applying to Part II.

Belladonna liniment and ointment.
Chloroform liniment and spirit.
B.P. preparations of morphine.
B.P. preparations of opium.
Liniment of aconite.
Ammoniated liniment of opium.
Tincture of cantharides and other (vesicating preparations of cantharides.
Preparations of poppies.
Oxalic acid.
Red and white precipitate.
Carbolic acid and its preparations.
Chloroform (not exceeding in quantity a quarter of a fluid ounce).

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LONDON: SATURDAY, MAY 3, 1902.

THE STATUTORY POISON SCHEDULE.

For several months a Committee, appointed by the Lord President of the Privy Council, has been engaged in the consideration of the Schedule which defines the articles coming within the provisions of the Act to regulate the sale of poisons, and there might be some reason for anticipating that the result of those deliberations would be subversive of the principle embodied in the Act of 1868—that the sale of poisons should be restricted to persons possessing approved competence to be entrusted with that function—if some published statements as to the probable outcome of an inquiry that was conducted privately could be trusted. But the acknowledged beneficial effect of the Act referred to, during the past thirty years, may more probably serve as a guarantee that, notwithstanding manifold defects of the Act, that essential principle will not be disregarded. Certainly the expectation may be entertained that when the report of the Privy Council Committee appears, it will be of especial interest, not only to the general public, but also to chemists and druggists. Meanwhile, without attempting to discuss any possible revision of the Poison Schedule that may be recommended in the public interest, as a matter that is *sub judice*, there is an especially pharmaceutical aspect of the subject, to which attention may be directed in this place, without trenching upon the scope of the official inquiry that is being conducted from a wider point of view.

The point now referred to is the bearing of the law upon the supply of such articles as Easton's syrup, syrup of hypophosphites, iron and arsenic capsules, Begbie's mixture, or Brompton cough mixture. Strictly considered and in accordance with judicial construction of the Act, the sale of those preparations requires to be carried out in conformity with the conditions pertaining to Part I. of the Poison Schedule. At the present time that is decidedly a hardship both to pharmacists, whose business is to supply such preparations, as well as to those members of the public who legitimately require to be supplied with them. The sound argument that it is better such inconveniences should be experienced, than that there should be frequent risk of poisoning, by accident or suicide, does not suffice to negative the counter proposition that as conditions change there is need for corresponding modification of legitimate practice. The preparations above mentioned serve to show that there has been a change of conditions, inasmuch as they are now in common demand, as medicines, to such an extent that while the authorised sellers of them cannot know all their customers the public object to inconvenience in obtaining them. As medicines, those preparations are not to be regarded, in the ordinary sense, as poisons when their supply for medicinal purposes is in the hands of competent persons whose statutory qualification, as well as their personal responsibility, should be the most trustworthy guarantees that proper care would be exercised.

The subject is, however, surrounded by so many difficulties as to render a hasty conclusion dangerous and undesirable. The circumstance must not be overlooked that the provisions of the Act were not originally intended to be made applicable only to pharmacy proper; but that they were also extended, in compliance with the exigencies of the period and even prominently so, to operations of trade. Moreover the comparatively recent application of those provisions to secret and proprietary preparations, containing small quantities of scheduled poisons, by the judicial construction that the sale of such articles is equivalent to sale of the particular poisons they may contain, is a further circumstance which may give rise to no small difficulty in devising a basis sufficiently elastic for discriminating between such cases and the supply of accredited preparations of pharmacy, so as to establish an unobjectionable line of demarcation that would not offer temptation to infringe the law. The regulations to be observed, in the sale of arsenic and strychnine, even by legally qualified persons, cannot be objected to as in any degree too stringent; but when all preparations of those articles are placed upon the same level, irrespective of their strength and of other determining circumstances connected with their medicinal uses, the necessity for some revision of the Schedule from that pharmaceutical point of view becomes plainly apparent. The function of the State, in that respect, would seem to be adequately performed by ensuring that the supply of such preparations shall be solely in the hands of competent persons; imposing upon them the duty of exercising such discretion, in complying with the demands of their customers, as the thoroughly educated pharmacist is, best of all, able to bring to bear in the interests of public safety.

ANNOTATIONS.

The Danger Attending Amateur Use of medicinal agents —especially the so-called "patent medicines," secret remedies, etc., which are the subject of enticing advertisement—is illustrated by the death from misadventure of a barrister said to have been in the habit of taking an American preparation called "Bromidia" as a remedy for sleeplessness. If the newspaper reports of the inquest can be trusted, that also furnished evidence of the incorrect opinions held by coroners concerning the statutory regulation of the sale of poisons, and the value, in that respect, of the Government stamp which has to be attached to every packet of secret or proprietary medicines that is sold. The City Coroner, Dr. F. Waldo, is reported in the *Times* to have said that though the bottle of "Bromidia" contained enough poison to kill several men, "it could be bought anywhere," because it bore the Revenue stamp. The Government stamp, however, has nothing whatever to do with the possibility of such an article as "Bromidia" being purchaseable anywhere. That depends upon whether the preparation does or does not contain one of the articles included in the statutory Poison Schedule. If a preparation does contain one of those articles, it cannot be lawfully sold by any one but a legally registered chemist, whether it bears the Revenue stamp or not; liability in that respect is a condition relating only to the different character of recommended preparations being either "known, admitted, and approved of as remedies" or secret and proprietary.

"Bromidia" is a preparation of the latter class and is on that account liable to stamp duty, though the composition of it is made known in the advertisements recommending its use. According to published statements relating to "Bromidia," it contains at least one scheduled poison, in the sale of which even a legally authorised seller has to comply with the statutory provision that the bottle is to be labelled with the name of the article, the word "Poison," and the name and address of the seller. The jury is reported to have appended to their verdict of "Death by misadventure" a rider urging that further restriction should be placed upon the sale of opiates (*sic*) of the character of "Bromidia." So far as the published account of that preparation discloses its composition, it is not an opiate, though containing potent medicinal ingredients. The sale of such medicinal agents is, to a certain extent, restricted by statute to duly qualified persons whose technical knowledge and experience, as well as the individual responsibility arising therefrom, should afford all attainable security against accident with poisons or their misuse; if further restriction be desirable, it might probably be useful to extend the number of articles that are to be deemed poisons within the meaning of the law; but the serious indication afforded by the circumstances mentioned at the inquest is that articles like "Bromidia" become dangerously "popular" through the abnormal countenance given to them by prescribers, in preference to the authorised medicines of the British Pharmacopœia.

If the Apprenticeship Question were one that could be answered by mere reasoning or by criticism of arguments, much space might be occupied in an attempt to convince Mr. Bradwall, whose letter appears at page 367, that the article on which he comments was not written and published with the object of making chemists appear worse than they are. It is only some chemists who experience difficulty in obtaining apprentices, and it is to be hoped that there are but few who entirely ignore their duty towards the apprentices they have got, but there is not the least doubt that many chemists, perhaps the majority, are unable or unwilling nowadays to train apprentices as was formerly customary, and it is, therefore, unreasonable on their part to expect to get pupils on such terms as were common enough years ago. Mr. Bradwall, however, while apparently recognising the force of the arguments advanced last week, is of opinion that it would be impossible to find a chemist willing to take an apprentice or pupil on the same terms as those made with a light porter. But such a statement is too sweeping, and, in any case, the law of supply and demand is fast settling the matter on its merits. Those who have been in the habit of taking apprentices for the sake of their cheap labour will experience increasing difficulty in the future in securing as many pupils as they could desire, while even conscientious chemists like Mr. Bradwall himself may find some inconvenience in the same direction as time rolls on, largely owing to the ill-advised action of others who, in making their private arrangements, appear too selfish to give due consideration to the interests of their calling.

The Best Reply, perhaps, that could be made to Mr. Bradwall on the general question is supplied by Mr. J. G. Wallbridge, in his thoughtful remarks on the training of apprentices (see p. 364), which the members of the Liverpool Chemists' Association were privileged to hear at a recent meeting. There was no need for him to preface those remarks with any apology, in view of the luminous manner in which he dealt with his subject. Instead of indulging in vain generalities and windy platitudes, he attacked the problem before him in a thoroughly practical way, dealing with each point in order, and devoting a fair share of attention to all in turn. After briefly defining the conditions which should be satisfied by the two chief parties to the contract of apprenticeship, he discussed terms and other important matters of detail, but the chief value of his paper will be found in the second half, where he explains how the pupil could be encouraged to go through a complete course of pharmaceutical studies during four years of apprenticeship. Chemistry, botany, prescription reading, materia medica, pharmacy, and dispensing—all are included in this admirable course, the special feature of which is that, with the goodwill of the employer, it can be gone through by any apprentice without requiring him to neglect his ordinary business training. But the goodwill of the employer is essential. Given that, "in proportion as the individual has acted up to his diploma, so proportionately will he be able to teach his apprentice." As a corollary to that remark, Mr. Wallbridge might have added that such an individual would also experience less difficulty than many chemists now do in securing apprentices.

If the Procedure Indicated were the invariable practice of chemists and druggists there would be a curriculum—neither voluntary nor compulsory, but a natural one that would furnish sound and unanswerable argument for division of the qualifying examination. The educational difficulty would then be to a great extent removed, for throughout the kingdom the chemist's shop would be the best school of pharmacy that could be desired, and with simultaneous or subsequent use of existing facilities for advanced teaching considerable improvement in the position of qualified chemists might safely be anticipated.

The Recent High Court Decision with regard to the position of limited companies under the Sale of Food and Drugs Acts (see *ante*, p. 353), has attracted only a limited amount of attention in the daily press, being dealt with most fully in a short editorial article in the *Standard*. It is there pointed out that corporations are credited with having neither bodies to be kicked nor souls to be saved, and that it is no new thing in these days of limited liability for corporations to evade liabilities to which, in the position of individuals, they would have been subject. In the case reported, "protection of the artificial personality seems to have been stretched to the utmost extreme to which such a pretension could be carried." As the *Standard* puts it, if a firm, by becoming a company with limited liability, could make itself superior to such slight considerations as the purity of the food supplied to the public, then it would certainly be time to add one more to the many Companies Acts which have attempted, more or less effectually, to protect the community. Fortunately, however, that contingency has not arisen, for the decision of the Divisional Court lays down the reasonable principle that if adulterated food is sold by a person acting on behalf of a limited company, that body is in exactly the same position as an individual seller.

Some Chemists and Druggists who have read the reports of the case referred to may have wondered how the decision affects limited companies under the Pharmacy Acts. The answer is—not at all, except as regards cases under Section 17 of the 1868 Act, the case against Messrs. Pearks, Gunston, and Tee, having been originally brought before a court of summary jurisdiction, in the same manner as cases under Section 17 of the Pharmacy Act. If the procedure under the Pharmacy Acts could be so modified as to enable all English and Welsh cases under Section 15 to be heard in courts of summary jurisdiction, instead of county courts as at present, there would probably be no occasion to attempt to amend the law specifically so as to include limited companies. Moreover, the Pharmaceutical Society would then escape much of the odium which at present attaches to its proceedings in carrying out the provisions of the 1868 Act.

The Society of Chemical Industry is to be presided over for a second term by Mr. Ivan Levinstein, of Manchester, whose interest in patent law is so well known, the Council of the Society having nominated him again for the office. Messrs. Beilby (past-President), R. Forbes Carpenter (H.M. Chief Inspector under the Alkali Act), A. Gordon Salamon (the well-known brewing expert), and R. C. Woodcock (Treasurer of the New York Section) retire from the Council by rotation, and the Council has nominated to take their place Professor Ramsay, Dr. F. B. Power (representing the New York Section), Mr. Thomas Tyrer, and Mr. E. Grant Hooper (of the Government Laboratory). The vacancy caused by the decease of Mr. Robert Irvine, of the Scottish Section, has been filled by the election of Dr. John Clarke, consulting chemist, Glasgow. The annual meeting of the Society will be held in Liverpool on July 9 and following days. A very excellent draft programme has been submitted, and one of the incidents of the annual general meeting will be the presentation of the Society's medal to Dr. Joseph Swan, F.R.S., of electric light fame.

The William Martindale Memorial Fund now exceeds two hundred and sixty pounds, a further long list of subscriptions being published in the *P.J.* Inset this week, by request of the Hon. Secretary, Mr. G. S. Taylor. Practically the whole of the subscriptions in this list have been sent by members of the Pharmaceutical Society, who have received copies of the circular letter (see *P.J. ante*, p. 302) recently addressed to them.

POISONING CASES.

Eleven deaths by poison have been reported during the past week—four accidental cases and seven suicides, thus:—

Poison.	Accident.	Suicide.
Bromidia	1	—
Chloral Hydrate	1	—
Chlorodyne	—	1
Chloroform (anæsthetic)	2	—
Hydrochloric Acid	—	1
Laudanum	—	2
Oxalic Acid	—	1
Phosphorus	—	1
Prussic Acid	—	1

Bromidia.—An overdose of this preparation was taken by Mr. Gerald Geoghegan, a London barrister, who was subsequently found dead in his chambers. A bottle of "Bromidia" and a paper which had contained a powder were found near him. At the inquest Mr. George Pond, chemist, stated that he sold the bottle of "Bromidia" to the deceased, who had been a frequent purchaser of the preparation. The bottle when it was sold was labelled with witness's name and address, but it was not labelled "Poison," as witness was then himself unaware of its ingredients. He had since found that the mixture contained Indian hemp, potassium bromide, sodium bromide, and chloral hydrate, and, in his opinion, it was sold under false pretences when labelled "Bromidia." It was an American preparation, manufactured in Paris. The jury returned a verdict of death by misadventure, adding a rider that further restriction should be placed upon the sale of such preparations as "Bromidia."

Chloral Hydrate.—An overdose of this drug was taken by a Worthing paperhanger, who had been troubled with sleeplessness.

Chlorodyne.—A Nottingham man, who had been in the habit of using chlorodyne regularly for bronchitis, took a fatal dose with suicidal intent.

Chloroform.—Two deaths occurred from the use of chloroform as an anæsthetic during operations—a woman at the London Temperance Hospital, and a file manufacturer at Oldham.

Hydrochloric Acid.—A young woman at Finsbury committed suicide by means of hydrochloric acid.

Laudanum.—A woman at Barnsley and a man at Stratford took laudanum with suicidal intent.

Oxalic Acid.—A fatal dose of oxalic acid was purposely taken by a draper at East Ham.

Phosphorus.—A Walsall woman prepared and drank a decoction with match heads.

Prussic Acid.—A brewer's agent was found dead with a bottle which had contained prussic acid and laudanum by his side.

LEGAL INTELLIGENCE.

Medicine Stamp Duty Acts.

Sale of Medicine Unstamped.

At Brierley Hill Police Court, on April 24, Emily Machin, of High Street, Pensnett, was proceeded against, at the instance of the Commissioners of the Inland Revenue, for exposing for sale "Machin's Infallible Pearl Ointment" without a proper cover wrapper and label issued by the Commissioners of Inland Revenue, and without being duly stamped. Mr. Stirk (Somerset House) prosecuted, and Mr. R. A. Willcock (Wolverhampton) defended. For the prosecution it was stated that the only label on the box was one stating that this ointment was a cure for certain ailments. Mr. Willcock expressed defendant's regret for the offence. It was a private house, and she held the view that if there was no label on the box no stamp was necessary. He had, however, carefully explained her position, and she undertook not to repeat the offence. The stipendiary said defendant had been once previously convicted, and had been twice cautioned. He imposed a fine of £2 10s. and costs.

Apothecaries Act.

Case of Illegal Practice.

At Halifax County Court, on April 24, George Pearson, who has for some time acted as medical officer to Halifax Friendly and General Medical Aid Society, was sued for £20 penalty for having, in contravention of the Act of George III., practised as an unregistered medical practitioner. The evidence showed that the Halifax Friendly and General Medical Aid Society was an organisation of 1,600 members, who were entitled to free medical attendance and medicine when ill in consideration of a contribution of 1d. per week. Defendant was paid £150 per annum, with house, rates, water, and gas free. He had, in addition to fulfilling this office, attended and prescribed for private patients. Defendant put in the certificate of a registered dentist, and argued that, as when treating one part of the body a practitioner must treat the whole, this certificate gave him power to treat the whole body. His Honour: If you had gout you would not pull a tooth out. Defendant claimed that the case was one that involved the livelihood of thousands. People in the markets who sold cough sweets, and those who dealt in allspice, which were used in medicines, would be liable to be sued if he was adjudged to have committed a breach of the Act. He was fighting against the compulsory starvation of himself and family. Not having appropriated the title of apothecary or claimed to be an apothecary, he submitted that he had done nothing he was not entitled to do. Mr. Shepherd, counsel for the Society of Apothecaries, put in a handbill issued by defendant, in which he offered to supply "an honest bottle of medicine for any ailment, for an honest 1s. 1d.," and invited "every pale person to consult him, buy his cheap medicine, and have their blood fed and nourished." His Honour (to defendant): Then you are in opposition to Mr. Pink Pills? His Honour pointed out that, whilst defendant might be a very able man, there was reason why this unregistered practice should be stopped; otherwise they might have every Tom, Dick, and Harry putting up as medical practitioners, with disastrous results to the community. Judgment was given for the Apothecaries' Society for the £20 penalty applied for.

Sale of Food and Drugs Acts.

Dispensing Case.

At Nottingham Police Court, on April 25, before Alderman Pullman and Mr. J. T. Spalding, John Joseph Iley, chemist's assistant, 214, Arkwright Street, was charged with selling a compounded drug—namely a mixture containing potassium iodide, two drachms made up with infusion of quassia to eight ounces, which was not composed of the ingredients in accordance with the demand of the purchaser; that was, the said compounded drug was deficient in potassium iodide to the extent of 36 per cent. Reuben Widdowson, chemist and druggist, of 214, Arkwright Street, was also summoned in respect of the same offence. Mr. H. W. Day (Town Clerk's Department) prosecuted, and Mr. A. Barlow appeared to defend on behalf of the Chemists' Defence Association. Mr. Day stated that Mr. Widdowson was a chemist carrying on business in Arkwright Street, and was responsible for the act of his assistant, Iley, who made up the prescription in this case. On March 17 Inspector Bett called at Mr. Widdowson's shop, and submitted to Iley a prescription which ordered two drachms of potassium iodide. He called again in an hour and received an eight ounce bottle of medicine, the contents of which he divided into three parts, one of which he handed to the public analyst, who had returned a certificate showing that it was deficient in potassium iodide to the extent of 36 per cent. It was particularly important that prescriptions should be made up accurately, as grave results might follow any neglect in that respect.

Mr. Barlow pleaded guilty on behalf of the assistant, and said it was an act of carelessness on his part, though it was sought to make Mr. Widdowson responsible. There was no suggestion of any fraud, and the actual amount of profit that would accrue to Mr. Widdowson through the carelessness of his assistant was exactly one halfpenny.

The Magistrates said they were convinced it was an act of carelessness on the part of Iley, who would be fined 20s. The charge against Mr. Widdowson was dismissed.

Camphorated Oil.

At Sheffield, on April 28, Theresa Moore, of 15, Miller Street, Sheffield, was summoned for selling camphorated oil which was not up to the B.P. standard of strength and quality. The sample was certified to contain only 17 per cent. of camphor instead of 21 per cent., and 83 per cent. of olive oil instead of 79 per cent. For the defence it was stated that the bottle containing the oil had not been opened since its arrival from the wholesale chemists until the inspector visited the shop. When the oil left the manufactory it was of full strength, and it must have deteriorated by being kept. A fine of 10s., including costs, was imposed.

Obituary.

Dart.—On April 7, William Dart, Chemist and Druggist, Bampton. Aged 71.

Forster.—On April 20, John Robert Forster, Chemist and Druggist, Newcastle-on-Tyne. Aged 74.

Moffat.—On April 2, at Kingston, Jamaica, Charles Dunwell Moffat, Pharmaceutical Chemist. Mr. Moffat was a former apprentice of Mr. G. T. W. Newsholme, of Sheffield, and a young pharmacist of great promise. He went out to Jamaica some years ago as medical storekeeper for the Government Medical Department, but had since opened a business in Port Royal Street, Kingston. He leaves a widow and two young children.

Murdoch.—On April 21, at his residence, Cliffside, Stirling, George Murdoch, Pharmaceutical Chemist, of the firm of Murdoch Brothers, Sauchiehall Street, Glasgow. Aged 79. Mr. Murdoch was one of the oldest members of the Society in Scotland, having joined in 1852. He served his apprenticeship with the late Mr. Kirkwood, of Stirling, and, after a short experience as assistant with the Glasgow Apothecaries' Co., he succeeded to the business of his brother William, in Falkirk. In 1847 he handed over the Falkirk business to his younger brother David, now retired, and the sole survivor of four brothers, all of whom were pharmacists. In partnership with his brother James, he started the well-known pharmacy in Sauchiehall Street, Glasgow. In 1855 he built the residential property of Cliffside at Stirling, his native town, where he was educated at the Grammar School. He had resided there, and travelled to Glasgow daily for nearly fifty years. On the death of his brother about three years ago he retired from business. He was quiet, methodical, devoted to business, and highly esteemed.

Rowley.—On April 23, Seth Breaks Rowley, Chemist and Druggist, Gloucester, formerly of York. Aged 55.

CHEMICAL SOCIETY.

At a meeting held on Thursday, April 17, the chair was taken by Professor **Tilden**, and Messrs. Davis, Dorée, Aders Plimmer, Allworthy, and Bedwell, were formally admitted Fellows of the Society. The first paper communicated was by

Dr. P. C. **RâY**, and dealt with

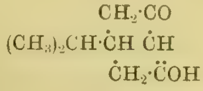
Dimercurammonium Nitrite and its Haloid Derivatives.

Some account had already been given of the investigation, which the author now more fully and accurately described. Mercurous nitrite partly decomposes in dissolving in water, giving metallic mercury and a solution of both mercuric and mercurous nitrites. Adding to this solution just enough sodium chloride and filtering, there is left a solution of mercuric sodium nitrite, which gives, with excess of ammonia, a white precipitate of a new salt, $2NHg_2NO_2,H_2O$, dimercurammonium nitrite. On dissolving it in hydrochloric acid and evaporating, there is left a new mercuric ammonium chloride, $2HgCl_2,NH_4Cl$, a white crystalline, volatile, and fusible salt. The corresponding bromide can be obtained in a similar way, as well as by evaporating a hydrobromic acid solution of the single bromides in the right proportions; it is largely decomposed by water into its component salts. With potassium hydroxide, not in excess, these double salts give dimercurammoniun chloride and bromide, $2NHg_2Cl,HgCl_2$, and $2NHg_2Br,HgBr_2$, the former not quite pure. With excess of potassium hydroxide, they yield the half-hydrated dimercurammonium chloride and bromide, $2NHg_2Cl,H_2O$ and $2NHg_2Br,H_2O$, the former already described by André. When either dimercurammonium chloride or bromide is dissolved in hydrobromic acid, the above-formulated mercuric ammonium bromide is obtained on evaporation; when dimercurammonium bromide is dissolved in hydrochloric acid, a mercuric ammonium chlorobromide, $2HgCl_2,NH_4Br$, is left on evaporation. From this chlorobromide, potassium hydroxide reproduces quantitatively dimercurammonium bromide, a fact which led the author at first to regard the chlorobromide as dimercurammonium bromide in union with four molecules of hydrochloric acid, and the corresponding double chloride and double bromide as $NHg_2Cl,4HCl$, and $NHg_2Br,4HBr$, respectively. The author considers that the chemical composition of dimercurammonium nitrite and its derivatives gives much support to the Rammelsberg-Pesci theory of the dimercurammoniun constitution of all ammoniated mercury salts.

Dr. A. W. **Crossley** communicated the next paper on the

Properties of 4-Isopropyldihydroresorcin.

In this he explained that the nomenclature adopted in the preliminary notice of this work has been changed. The substance there spoken of as 2 : 6-diketo-4-isopropylhexamethylene is now called 4-isopropyldihydroresorcin, for though this and other similar substituted dihydroresorcins behave as diketones towards hydroxylamine, there can be no doubt that their most usual form is the keto-enol modification represented by the following formula :—



$$\begin{array}{l} \qquad\qquad\qquad CH_2{\cdot}CO \\ (CH_3)_2CH{\cdot}\dot{C}H\ \dot{C}H \\ \qquad\qquad\quad\ \dot{C}H_2{\cdot}\ddot{C}OH \end{array}$$

Dr. J. T. **Hewitt** and Mr. J. N. **Tervet** dealt next with the

Oxonium Salts of Fluoran and its Derivatives.

Fluoran (the phenolphthaleinanhydride of Baeyer) and some of its derivatives have been examined as to their power of forming salts with strong mineral acids. The following salts have been prepared and examined:—Fluoran nitrate, $C_{20}H_{12}O_3,HNO_3$; monosulphate, $C_{20}H_{12}O_3,H_2SO_4$; dimethylfluoran nitrate, $C_{22}H_{16}O_3,HNO_3$; dimethylfluoran monosulphate, $C_{22}H_{16}O_3,H_2SO_4$; dimethylfluoran disulphate, $C_{22}H_{16}O_3,2H_2SO_4$; fluorescein hydrochloride, $C_{20}H_{12}O_5,HCl$; fluorescein monosulphate, $C_{20}H_{12}O_5,H_2SO_4$; fluorescein disulphate, $C_{20}H_{12}O_5,2H_2SO_4$.

Dr. G. T. **Morgan** contributed the last paper, on the

Influence of Substitution on the Reactivity of the Aromatic Metadiamines.

The author showed that the successive introduction of methyl groups into the three positions adjacent to the nitrogen atoms of *m*-phenylenediamine is attended by a well-marked diminution in the reactivity of the diamine towards methylating agents, the action of methyl chloride or bromide being prevented when the substitution of the three hydrogen atoms is complete. *m*-Tolylenediamine (2:4-diaminotoluene), like *m*-phenylenediamine, gives rise to a mixture of tertiary base and quaternary salt, but 4:6-diamino-*m*-xylene yields the tertiary base as the sole product, while diaminomesitylene is not affected. It was also shown that the tertiary diamines containing one free para-ortho-position with respect to nitrogen are very reactive substances, darkening on exposure, yielding unstable platinichlorides, and interacting readily with formaldehyde and the diazonium salts.

Various other papers were taken as read, and the meeting then terminated.

ROYAL INSTITUTION.

At a meeting held on Friday, April 25, Sir **James Crichton-Browne** in the chair, Dr. **James Mackenzie Davidson** delivered a discourse on

X-Rays and Localisation.

The lecturer first gave a brief historical sketch of the various researches leading up to the important discovery which Röntgen made known to the world in 1895. The induction coil, which was the result of Faraday's investigations, was then explained. Passing on to the use of vacuum tubes, he said that Faraday had conducted researches on the passage of sparks through partially exhausted tubes, but Sir William Crookes had brought these tubes to perfection, attaining by means of modern vacuum pumps, a much higher vacuum than Faraday had been able to produce. As a result of his exhaustive researches with these tubes, Crookes had been led to describe what he considered a fourth condition of matter, which he called radiant matter. Experiments were then performed by the lecturer with calcium sulphide and other substances in a vacuum tube, showing that when the electric current was passed these bodies not only exhibited the phenomenon of fluorescence, but also of phosphorescence—that is to say, continued to emit light for some time after the current had been stopped. The use of barium platino-cyanide was next dealt with. It was found that this was a most excellent substance for revealing the invisible part of the spectrum. In illustration of this the spectrum was thrown on the screen and a barium platino-cyanide screen was placed in the path of the rays just beyond the visible part; by this means bands of light were distinctly seen in what is commonly called the invisible part of the spectrum. It next explained by means of a large model how the rays were given off. When the rays proceeding from the concave cathode impinged on any solid matter, such as the ante-cathode, X-rays took their origin; they did not, however, stay there, but splashed off, so that secondary X-rays were given off from the sides of the tube. This could be proved by placing a strip of lead over the flask just in the path of the rays from the ante-cathode, and then taking a photograph of the hand or other suitable object, when overlapping images were formed, giving indistinct pictures. To obviate this difficulty the tube could be put inside a box lined with coats of red lead and white lead, a round hole being left in order to permit of the egress of the primary rays from the ante-cathode. In this way clear images were produced which were of immense advantage in medical and surgical work. In actual work for surgical purposes it was advisable to use about three films superposed when making an exposure; in this way the lowest film was as good as the top one, and sometimes, in case one film was not perfect, a good effect might be obtained by viewing the three whilst superposed. The lecturer then photographed a large design of a crown, etc. The design was placed over a large photographic plate enclosed in two envelopes; this was exposed to the rays for two minutes and then the plate taken out of the envelopes and exposed to the light of the room for five minutes; the plate was then developed in the room, the result being very satisfactory. The lecturer then briefly described the method for localising a foreign body or the seat of a fracture. This was done by taking two pictures, one on either side of a central line, and then viewing these in a stereoscope. By means of an ingenious apparatus which was shown exact measurements could be taken.

CHEMISTS' ASSISTANTS' ASSOCIATION.

A meeting of this Association was held at 73, Newman Street, London, W., on Thursday, April 24, the President, Mr. J. Wicliffe Peck, in the chair.

Mr. Charles Hymans, one of the members of the Association, last year read a paper on "Lenses" (see *P.J.* [4], **12**, pp. 184, 217), and on Thursday evening he supplemented that paper by a communication on

Glass.

Among the manufactured products which have helped to raise mankind from the savage to the civilised state, said Mr. Hymans, there are few substances of greater importance than glass. Science could scarcely exist without it, but to no scientist is glass more indispensable than to the chemist. Chemistry had only become a science worthy of the name since glass—transparent, easily shaped, and unacted on by powerful acids—had given to its students the vessels necessary to the laboratory; as well as the spectroscope, by means of which the most distant stars might be analysed. Although glass had only come into common use within comparatively modern times, its discovery was lost in antiquity, modern researches having shown that glass was manufactured by the Egyptians 3000 B.C. The fact that plants take up large quantities of silica and alkali from the earth, and that hay and straw are particularly rich in those substances, had given rise to the conjecture that the burning of a prehistoric haystack and the consequent fusion of those elements led to the original discovery of glass. The Egyptians were also very proficient in metallurgical processes, and glass is a frequent by-product in those processes. Mr. Hymans then went on to give a brief history of the various uses to which glass has been put, and to describe the processes of manufacture, giving the composition of the different kinds of glass used in commerce. Referring to the coloured varieties, he stated that glass is capable of dissolving and holding in solution, when cold, many metallic oxides and salts, and some of those are capable of imparting to it various colours. A fine ruby tint, such as is used for photographic dark-rooms, is imparted by gold or sodium seleniate; an inferior red by cupric oxide. Blue is obtained by the use of cobalt, and various shades of green from chromium, cuprous, and ferrous oxides, the latter in excess giving black glass. A beautiful canary yellow is given by uranium, and a fine orange by sulphide of antimony; silver gives pale yellow, as do also ferric salts and lead in excess. Nickel gives a bluish tint to potash-glass, and a hyacinth to soda-glass; in excess a violet. Manganese, according to the quantity used, imparts a rose, purple, brown, or black tint, smoked glass being generally made by its use. Opal glass contains various opaque substances, such as bone ash, cryolite, stannic oxide; a cheap kind being made with guano. Lead glass is best for colouring purposes, owing to its easy fusibility. The glass may be coloured throughout, or may be simply "flashed" on the surface, the latter process consisting of painting the various colouring matter on the surface when in a semi-molten state.

At the conclusion of the paper the President and several members complimented Mr. Hymans on the quality of his communication and a number of questions were asked concerning various points.—Mr. Hymans replied, and a vote of thanks having been accorded to him the proceedings terminated.

LIVERPOOL CHEMISTS' ASSOCIATION.

A meeting was held on Thursday, April 24, the President, Mr. H. W. Wyatt, Jun., in the chair.

Decomposition of Chloroform.

Mr. T. H. Wardleworth said a case had been brought to his notice of chloroform, when administered in a badly ventilated room, lighted by gas, being decomposed, yielding an intense oily, chlorine odour. The makers of the particular brand used, however, to caution persons handling the substance against doing so in gas-heated or lighted rooms unless ventilation be properly provided for.

The President and Mr. P. H. Marsden said they had heard of similar cases, and the latter inquired if there was any reason why a properly made and carefully purified chloroform, obtained from methylated alcohol, should not be used as an anæsthetic, and also if any member had had experience of its use in that way. In public institutions where large amounts of chloroform were used in operations the difference in price between chloroform from absolute ethylic alcohol and that from methylated alcohol was a considerable item, and if pure methylated chloroform were equally as good and equally applicable as the more expensive kind from ethyl alcohol it was important that the fact should be known.

Mr. A. C. Abraham thought this was of special importance to medical men. On theoretical grounds pure chloroform from either source should be equally good, but, practically, it was a point requiring careful proof. In the case of ether he could state that many of the samples made from ethylic alcohol were inferior to those from methylated alcohol, as shown by him some years ago in a paper read before their Association. To the ordinary medical practitioner the extra cost of chloroform from pure alcohol did not enter into consideration, as a higher rate was willingly paid for a purer article, and from the greater confidence felt in its use.

The President, whilst at a hospital some years since, had had to supply invariably chloroform from methylated alcohol, the makers of which guaranteed it to be "Pure chloroform, answering all the tests of the B.P." During the time he was there they never had an accident with its use, and the only bad cases he had ever known there were three which took place inside of a single month, in each of which thoroughly pure chloroform from ethylic alcohol was used. These accidents occurred in winter, and he was of the opinion that bad ventilation and a gas stove in the room were the factors which caused the trouble.

Mr. J. G. Wallbridge then read a paper on

The Training of Apprentices,

which is printed at page 364.

Dr. C. Symes, at the close of the paper, gave an exposition of his ideas as to apprenticeship and its results in pharmacy, in the course of which he mentioned his reasons for advocating division of the qualifying examination, and the arguments in support of that method of introducing a curriculum in pharmacy. It would, he said, reduce the large proportion of rejections, and would considerably relieve the pressure of study without reducing the stringency of the examination.

Mr. T. F. Abraham, in proposing a vote of thanks to Mr. Wallbridge and Dr. Symes for their addresses, said that the methods advocated should commend themselves to pharmacists. It was high time some effort was made to systematise pharmaceutical teaching and examination. The percentage of rejections was lamentable, and it could only be reduced by a process of early filtration of the incompetent, and by a subsequent graduation or division of the qualifying examination. Qualified men, nowadays, were not above suspicion as regards their being acquainted with their business, the existing arrangements being clearly unequal to the task of imparting to them a thorough knowledge of their profession.

Mr. Cowley seconded the vote of thanks, reminding his hearers that the system was at fault, not the men altogether, and the remedy proposed had his hearty support. A compulsory curriculum and a divided qualifying examination were both necessary, for a certain amount of compulsion was good for a youth, and knowledge gained gradually during a curriculum remained longer than when it was accumulated at a rapid rate in a short time. No one had more sympathy than he had for men who had failed, and there were cases where failure was not due to want of knowledge. If the Pharmaceutical Society could get a curriculum made compulsory, and the final examination divided up, it would reduce the failures and, by so doing, gain for itself a body of supporters who now, by repeated failures, had come to regard the Society simply as an organisation the reverse of friendly to them.

Messrs. T. S. Wokes and Prosper H. Marsden also spoke, the latter saying he favoured division of the examination and the enforcing of a definite curriculum at properly recognised schools and colleges. Mr. Wallbridge's remarks upon the dignity of labour were very true, and showed commendable common sense. Apprentices certainly ought to go through their work from the most elementary stages; but, at the same time, they should not be continually employed in duties which ought to be relegated to the errand boy. As Herbert Spencer had remarked, that boy who does a little work regularly day by day will grasp his subject more thoroughly than he who crams his learning into a short period of time, and that was practically the key-note of Mr. Wallbridge's paper. He could not, however, agree with Mr. Wallbridge that the Pharmaceutical Society had been ill advised in discontinuing the Preliminary Examination; on the contrary, he was of the opinion that it was a very wise step. As to tricky prescriptions—he, as an examiner, could say these were not favoured by him—all examination prescriptions should be such as would be met with in the ordinary course of one's daily work at the dispensing counter.

The President, having said that this, the initial essay by Mr. Wallbridge, had proved a very valuable and helpful contribution to their knowledge of how apprentices should be trained, and had afforded them evidence that there were still masters who did their duty by the youths under their care, went on to remark that the abolition of the Preliminary was to his mind the best thing the Pharmaceutical Society had done for some years, and that it would prove to be the only thing capable of preparing the way to that systematisation of pharmaceutical education, which they were so badly in need of.

Mr. Wallbridge then replied, thanking his hearers for the vote of thanks, but still maintaining his objection to the Preliminary having been abolished, which, he said, ought not to have taken place until the Qualifying Examination had been divided, as Dr. Symes proposed.

A motion was then brought forward by Mr. T. F. Abraham to the effect that the Association should call a council meeting at an early date to make arrangements and work out details for assisting, as much as lay in its power, the project of a

Liverpool University.

This was seconded by the President, and supported by Messrs. Cowley and Marsden, and on being put to the meeting was passed unanimously.

MANCHESTER PHARMACEUTICAL ASSOCIATION.

The annual meeting of this Association was held at the Victoria Hotel, Manchester, on Wednesday, April 23, the President (Mr. Geo. S. Woolley) in the chair.

Annual Report.

The annual report detailed the work of the session, and concluded as follows:—During the year we regret to record the death of two eminent pharmacists—Mr. Siebold and Mr. Martindale. Mr. Siebold had been closely connected with this Association for a great many years, and his death, as well as that of Mr. Martindale, has been a distinct loss to pharmacy. We have also to record the death of Mr. Fawcitt, Oxford Road, who had been a member of the Association.

The Treasurer's accounts were submitted, and showed a balance in hand of over £14.

The Chairman, in moving the adoption of the report and balance-sheet, said the work of the year had been very satisfactory. The papers had been of considerable merit and usefulness to those who attended. The attendances, however, had not been so good as he could have wished, and on one occasion the paper had to be abandoned because there was not an audience worthy of the occasion. He wished something could be done in that city and neighbourhood to make the Association better supported. It would invigorate the Council to further effort. There was nothing of a legislative character or suggested legislation connected with pharmacy that he need comment upon, simply because they seemed to be in a position of waiting for the time when their proposals could be brought before Parliament. The prospect did not seem very hopeful. The wretched war in South Africa was still going on, and the business of the country was so congested that he did not see much hope of their gaining the ear of Parliament at present. With regard to the deaths mentioned in the report, Mr. Siebold had been a faithful supporter of the Association for a great number of years, and had done very good work in the educational line. He had been of great assistance to many students who had passed through the Manchester schools. A testimonial which he held in his hand from an old pupil testified to his labours with students as being never parsimonious. All the members of the Association owed a deep debt of gratitude to the deceased gentleman. At his cremation, a deputation from the Association attended, and there were also gentlemen present of note in the city. As to Mr. Martindale, his loss was national and to be regretted. Mr. Fawcitt was a member of the Association for many years. There was one subject which, however, was not ripe for discussion, that he might allude to, and that was the question of pharmacy degrees. It had been brought before the Council. The North British Branch seemed to have got the support of the Carnegie Trust, and they were going in for a University education for advanced pharmacy students in Scotland. The same subject had been in the air for some time in England. Their own Council had been notified of the same idea as floating through the minds of the gentlemen on the staff of Owens College. Certain gentlemen connected with the Association had been deputed to wait upon the authorities of the Owens College to ascertain what is possible to be done, and what it was proposed to do, and the result of that conference would be laid before the new council to be elected that night, after which the matter would be ripe for discussion. The Liverpool Association had subscribed £100 to the University scheme, and it had been suggested that Manchester pharmacists should be invited to do something in the same direction. A great deal might be said *pro* and *con* on the subject, but he thought more could be said *pro* than *con*, and he hoped something would be forthcoming. Mr. Kirkby seconded the motion, which was carried unanimously.

Election of Officers.

Mr. G. S. Woolley was re-elected President of the Association; Vice-Presidents, Messrs. H. Kemp and W. Kirkby; Hon. Treasurer, A. J. Pidd; Hon. Secretary, J. C. Kidd. Other members of the Council: J. Wild, W. Lane, J. Westmacott, J. Taylor, J. Woodruff Walton, E. Yates, J. Grier, and D. Lewis. Auditor, J. Blyton.

Pharmaceutical Council Election.

Mr. J. Rymer Young, commenting upon the apathy of pharmacists in attending the meetings of the Association, said such apathy was almost universal at almost any scientific meeting, and it was increasing. Even in Lancashire they could not find another member anxious to join the Pharmaceutical Council.

The Chairman submitted a letter received from Mr. C. E. Pickering, anxious to secure a seat on the Pharmaceutical Council.

The Proposed Tax on Cheques.

The Chairman, commenting upon the proposed increase on cheques by the Budget, said such a tax would be far-reaching. The accounts of pharmacists were naturally not large, but small accounts were readily paid by cheques. Nobody cared about a penny, but twopence would be a different matter, and would be a very vexatious tax. The Manchester Chamber of Commerce and the Manchester Guardian Society for the Protection of Trade had passed resolutions objecting to it, and he thought they ought to do the same.

A resolution protesting against this increased penny on cheques was carried unanimously, a copy to be sent to the Chancellor of the Exchequer.

British Pharmaceutical Conference.

The following members were appointed a deputation to attend the Pharmaceutical Conference at Dundee: Messrs. Pidd, Johnstone, Kidd, Phillips, Kemp, Grier, and Kirkby.

Mr. J. C. Kidd then read a very interesting paper on

Methods of Sight-Testing.

illustrated by chalk diagrams and various lenses. Though not strictly a pharmaceutical subject, he ventured to predict that in the near future it would become as much the province of every educated pharmacist to correct refractive errors of vision as in recent years it had added photographic apparatus and materials to the already almost innumerable number of articles in which he dealt. We lived in an age of progress and change, and it seemed to him that the latter term was more applicable to the condition of the pharmacist of to-day. When they found the business which in years gone by they claimed as their legitimate reward for educating and qualifying themselves in accordance with the requirements of the law being ruthlessly snatched from them by unskilled competitors, it behoved them to look around for some other means of maintaining their position. It was quite true that in this new departure there was no legal protection, but the science of sight-testing was one which could only be acquired by a course of study, and without it anyone pretending to correct defects of vision would not only be a danger to the public, but in the long run a hopeless failure so far as his own interests were concerned. He, however, knew no one more fitted to undertake such responsible work than the educated pharmacist, and it was for that reason he brought the subject of sight-testing before the Association. Mr. Kidd then dealt at length with "light," "refraction," "reflection," concave and convex lenses, the formation of images and magnification, and also gave an analysis of the eye, explaining defects of vision and their rectification by artificial means, afterwards demonstrating in a practical way the principles he had laid down by means of test types and lenses.

The President (Mr. Geo. S. Woolley) said they were very much obliged to Mr. Kidd for his paper. He did not know whether it would encourage any members of the Association to go into the spectacle trade. It was clear Mr. Kidd must have spent a great deal of time in making himself an expert in optics. He moved a vote of thanks to Mr. Kidd for his paper.

Mr. Phillips seconded the motion, and said he had dealt in spectacles for very many years. Mr. Kidd had pretty well described the methods of sight-testing. Those, however, who contemplated dealing in optics ought never to attempt it until after attending lectures or qualifying themselves in some way for the work. He remembered that nearly half a century ago at one establishment people who wanted spectacles were summarily dealt with in two classes, "near sight" and "far sight." The science had much advanced since those days.

The vote of thanks was heartily accorded to Mr. Kidd, who briefly acknowledged the compliment, and the meeting terminated.

CARDIFF CHEMISTS' ASSISTANTS' ASSOCIATION.

A meeting of this Association was held at the Queen's Café, Cardiff, on April 18, the President, Mr. A. B. Sparrow, in the chair. After the preliminary business had been transacted, Dr. Williams, Medical Officer of Health to the Glamorgan County Council, delivered an address on

The Adulteration of Food and Drugs.

Having given a brief sketch of the circumstances leading up to the passing of the Sale of Food and Drugs Act, Dr. Williams went on to say that the officials of the Glamorgan County Council found it very difficult to know what samples to purchase for analysis, and especially was that so in the case of drugs. At one time adulteration was so prevalent that they had no difficulty in choosing samples, because almost everything was adulterated, but now, although he believed a certain amount of margarine was sold as butter, adulteration was not so largely practised. Still, in regard to drugs, he did not think inspectors took as many samples as they ought to do. He was aware that the purchase and examination of drugs by the authorities bristled with difficulties, but he was of opinion that much good could be done by sampling drugs of definite composition. Of course, he did not mean such articles as "pink" pills, castor-oil pills, life and death elixir, etc.; but it had been held that drugs of the British Pharmacopœia, for which there was a definite standard, should be in accordance with that standard. In Glamorgan the inspectors purchased principally almond oil, olive oil, camphorated oil, milk of sulphur, precipitated chalk, fluid magnesia, liquorice powder, tincture of iodine, and zinc and mercury ointments. Prescriptions were rather difficult to deal with—but it could be done. Medicinal remedies made up according to special prescriptions might be purchased for analysis, but in those cases three portions of the prescription had to be obtained. If the analysis showed any variation from the prescription, even though the purchaser got more of any particular drug than was demanded, proceedings could be taken. Unofficial drugs, such as glycerin and lime juice, oatmeal soap, and proprietary medicines were not taken for analysis.

On the motion of the **President**, seconded by Mr. **Ferrier**, a hearty vote of thanks was accorded to Dr. Williams for his interesting address.

CHEMISTS' AND DRUGGISTS' SOCIETY OF IRELAND.

At a meeting of a sub-committee of this Society and the Belfast Grocers' Association, held on April 16, at Belfast, the subject of

The Sale of Proprietary Articles,

was considered, and, after discussion, the following resolution was carried:—

> That, as many proprietary articles handled in common by chemists, druggists, and grocers, yield, owing to excessive cutting, a totally inadequate margin of profit, it is agreed that this sub-committee representing these sections of the trade, respectfully urge upon the manufacturers of articles (as per list) to fix a minimum wholesale and retail price to admit of a fair and reasonable profit from handling the goods, and to arrange for the protection of the price so fixed.

The sub-committee will meet again shortly to compare lists.

EDINBURGH CHEMISTS', ASSISTANTS,' AND APPRENTICES' ASSOCIATION.

At a meeting held in the Pharmaceutical Society's house, 36, York Place, Edinburgh, on Wednesday, April 16, Mr. J. G. **Sclater** (President) in the chair,

Mr. **Fraser McDiarmid** read a paper on

Liquid Extract of Nux Vomica.

Among the innovations of the 1898 Pharmacopœia was the introduction of the liquid extracts of belladonna, ipecacuanha, and nux vomica, from which all the other preparations of the same drug can conveniently be made. The principle seems to be fairly sound, and has been advocated for many years; the concentrated extract is standardised, consequently the other preparations are likely to be of uniform strength. It is urgently necessary that these extracts should be perfect, that they should be uniform, not only in alkaloidal value, but also in such matters as colour, gravity, and general composition. This consummation is not yet attained, and further efforts are still necessary. The liquid extract of nux vomica is the least satisfactory, and has evoked much criticism. Writer after writer complains of the oily deposit in the liquid extract and the turbidity of the tincture arising from it, and the writer can confirm that from his own experience. A number of Winchester quarts were filled with perfectly bright liquid extract of nux vomica made in June. In December each had a stratum of oil, ¼ or ½ in. in depth from the surface, and a varying amount of smeary deposit at the bottom. The intermediate liquid was bright, but became turbid on a further lowering of temperature. Tincture made from this liquid extract was hazy, and filtered bright with difficulty. Solid extract made from this liquid extract was not at all satisfactory. The whole matter has been thoroughly investigated by Greenish and Smith in the Research Laboratory of the Pharmaceutical Society, and a liquid extract made as suggested by Greenish and Smith is greatly superior to one obtained by the official method, but the process is troublesome. It might be better to use a menstruum which would not dissolve the oil at all. In the process for the liquid extract, one is ordered to take 1 lb. of seeds in No. 20 powder, and with 70 per cent. alcohol prepare 16 fluid ounces of strong liquid extract, assay this and dilute it with more alcohol so that the resulting liquid shall contain 1·5 per cent. of strychnine. This implies the use of seeds containing at least 1·5 per cent. of strychnine. In one case the author was able to get 15 fluid ounces of standard liquid extract from 1 lb. of seeds, whereas in another operation, with other seeds, he could only get 11 fluid ounces of standard extract from 1 lb. of seeds. Supposing the finest Ceylon seeds were used, which contain as much as 5·3 per cent. of total alkaloid, and where the strychnine might be as 3·1 of brucine, then from 1 lb. of seeds one might obtain as much as 40 or 42 fluid ounces of standard liquid extract. What, then, becomes of our boasted uniformity? With regard to the assay of the finished product, the adoption of some process which excluded the oil of nux vomica from the extract would conduce to ease as well as accuracy. Bird has worked out a satisfactory method by which the oil is got rid of in the first part of the operation, but it is doubtful if two different operators, dealing with the same extract, would get results approximately the same. The separation of strychnine is not, in practice, the easy matter which one might infer from the pharmacopœial directions. Various modifications have been suggested, such as, *e.g.*, the employment of 5 instead of 10 C.c.; the use of a measured quantity of wash-water in washing the strychnine ferrocyanide; the use of wash-water at fixed temperature; and yet, however carefully done, that strychnine residue always seems to turn red with nitric acid. One writer (Umney) says that the strychnine result is rather above the actual amount present; another says that a definite quantity is lost with each 10 C.c. of wash-water, and would add this to the amount really found, so that an ordinary pharmacist is inclined to tear his hair and lament that all is vanity and vexation of spirit. Much remains to be done in the way of furnishing a formula for liquid extract of nux vomica which shall produce a uniform preparation by whomsoever made.

Mr. **Sivewright** said he had observed that there was a very considerable variation in the colour of tincture of nux vomica made from different fluid extracts.

Mr. **Rowland** said he had also observed the variation. It had been suggested that some wholesale makers used an artificial colour so as to send out their fluid extract always of the same depth of colour

Mr. **Hill** said in a paper read before the Association some years ago Mr. Dey showed that a very good and definite tincture of nux vomica could be made from the seeds direct by percolation. It could also be easily made quite definite by estimating the seeds and percolating till exhausted. With regard to the suggestion to employ acetic acid there was an interesting article in the January number of Squibb's 'Ephemeris' on the employment of a 10 per cent. acetic acid menstruum in the preparation of fluid extracts. Referring to the U.S.P. acetic fluid extract of nux vomica, it was stated that after standing a year it was still clear and that the formula gave a reliable extract because of the solvent power of the acetic acid.

Mr. **Duncan** said it was very doubtful if the introduction of these standardised fluid extracts marked a real advance in pharmacy. He did not think they would ever be satisfied till they abandoned them altogether and employed strychnine itself or strychnine and brucine. He would like to ask if Mr. McDiarmid had had any trouble with the deposit, sometimes considerable, in fluid extracts of ipecacuanha. He found it contained considerable quantities of lime and also alkaloid. It seemed as if it might be caused by using weaker alcohol for the second and third percolations.

Mr. Currie said he could confirm the experience that a fluid extract or tincture made in summer became hazy and a layer of oil separated in winter.

Mr. Rowland said the addition of 2 per cent. of acetic acid he had found to be a most valuable addition in extracting kola seeds.

Mr. McDiarmid, in reply, said the varying colours were due to using different seeds. One seed might yield 40 oz. and another only 11 oz. from 1 lb. of seeds, and therefore there would be a difference of colour. He had observed in the case of belladonna extract that if any heat was used it was darkened in colour, and probably it was the same with all extracts. He had examined the deposit in fluid extract of ipecacuanha and found alkaloid.

Mr. Archibald Currie next read a note on

The Solvent Action of Sodium Salicylate.

A prescription was recently prescribed for compound tincture of cinchona in an aqueous solution of sodium salicylate. On dissolving the sodium salicylate in the water and adding the compound tincture of cinchona last, there was a considerable heavy flocculent precipitate, producing an unsightly mixture. By dissolving the sodium salicylate in about twice its weight of water, adding the tincture to this strong solution, and then making up to the prescribed quantity by adding the remainder of the water, a mixture was obtained almost free from any precipitate. This led the author to investigate the solvent action of sodium salicylate in the case of other tinctures containing substances of a resinous nature, and he found that, in almost every case, where no fixed or volatile oil was present, the action of sodium salicylate was to render them soluble in water. Among the preparations yielding clear solutions with sodium salicylate and water were tinctures of catechu, arnica, myrrh, and digitalis and fluid extract of cascara sagrada. The myrrh required a very large proportion of sodium salicylate to bring it into solution, and even then it was not quite clear, owing, perhaps, to the volatile oil. Tinctures of capsicum and ginger did not give clear solutions, owing, probably, to the volatile oil. Apparently sodium salicylate exercises a solvent action on resins.

Mr. James Sivewright read the last paper on

Compressed Tablets.

He referred to the series of articles on the subject which has appeared in the *Pharmaceutical Journal*, and pointed out that some drugs should not be administered in tablet form. He then gave a few directions for dispensers. The dies and all polished parts of a tablet machine must be kept absolutely free from rust and brightly polished, or success is impossible. They should be coated with vaseline when not in use. The drug to be compressed must be in a granular, perfectly uniform powder. If this is not carefully attended to the powder will not run readily from the funnel into the die, nor will the tablets be of the same size. There are some powders in this form which require no preparation, such as salol, potassium bromide, ammonium chloride, and granular pepsin. The majority of powders and mixtures require to be granulated and to have some addition made before they can be compressed. Speaking generally, insoluble substances are granulated by the addition of sugar and water and soluble substances by the addition of gum and water. About ten per cent. of sugar or gum is a suitable addition, very soluble or deliquescent substances requiring more gum than when less soluble. The powder is then sifted and dried. A No. 20 sieve gives suitable granules. A powder which has been granulated by the addition of sugar is much more liable to adhere to the die and punches than one prepared with gum acacia. The author prefers to use gum, taking care not to compress too hard, and at the same time mixing the powder with about 10 per cent. of powdered arrowroot, which causes the tablet to disintegrate. In fact, all insoluble substances should have a little arrowroot added. Water is sometimes objectionable in damping the powder, as, for example, when powdered rhubarb is mixed with sodium bicarbonate or magnesia. In such cases rectified spirit is used. The principal trouble in preparing tablets is caused by the powder adhering to the die. That is remedied by spreading out the granulated powder on a sheet of paper and dusting it over with talc, about 3 or 4 grains being sufficient for an ounce of powder. With some powders this is not sufficient, and an oil is necessary. That is applied by means of a spray. Thirty grains of vaseline or vaseline oil are dissolved in ether and a small quantity sprayed over the powder, which is dried before compression. Sometimes both oil and talc are used. When the tablets have to be dissolved, talc or oil are inadmissible as lubricants, and powdered boric acid is used. Effervescent tablets are best made by granulating with gum acacia and preparing the granules in two separate portions — the sodium bicarbonate with any alkaline constituents in one lot and the tartaric acid with any acid constituents in the other. The two sets of granules are thoroughly dried and mixed just before compressing, boric acid being used as a lubricant if necessary. A mixture of 3 parts sugar of milk and 1 part cocoa gives a very useful basis for active drugs such as cocaine, podophyllin, etc. This mixture gives a very nice granular powder, and one which never adheres to the dies. The experienced dispenser, knowing the physical and chemical characters of drugs and chemicals to be made into tablets, will have little difficulty in selecting the proper excipient or lubricator.

Mr. Duncan said it was not improbable that the solvent action of sodium salicylate might be due to the fact that, salicylic acid being a weak acid, the resins combined with the sodium to form resinate with liberation of salicylic acid which was retained in solution by the alcohol present. With regard to compressed tablets, he observed that it was by volume and not by weight that they were adjusted, and he would like to ask if their accuracy could be relied on. He had had experience of cocaine tablets where different tablets produced very markedly different results. He had recently seen a prescription for boric acid tablets, directing three to be crushed and dissolved in water. In such cases it would surely be as well to have powders.

Mr. Hill said Mr. Currie's mixture emphasised the importance of paying attention to the method of mixing in dispensing. The point about sodium salicylate was worth working out. He believed it had a solvent action on various substances, and he was not inclined to think there was any decomposition such as Mr. Duncan suggested. In the case of myrrh it might give a formula for an elegant antiseptic mouth wash. One of the chief disadvantages of the tablet method of medication was that it tended to throw the dispensing of medicines into the hands of the large manufacturers and reduce the retail pharmacist to a mere distributor. Mr. Sivewright had shown that the ordinary pharmacist could easily turn out all his own tablets if he only liked to try.

Mr. McDiarmid asked if the machine always compressed the same quantity into a tablet of equal size or would one operator produce one size and another a different size?

Mr. Sivewright, in reply, said there was an appliance for regulating the pressure so as to ensure regularity in the size. In practice, however, he never used it, as one very soon acquired the habit of operating so as to give practical uniformity.

In conclusion, Mr. Sivewright demonstrated the use of the Freck tablet machine by preparing some salol tablets.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

EMETINE HYDROCHLORIDE.

The pharmacological properties of pure emetine hydrochloride and its toxic action on cold and warm blooded animals have been further examined by Maurel, who finds that the smallest lethal dose per kilogramme amounts to 0·15 Gm. (2½ grain) in the case of the conger eel, pigeon, and rabbit. Emetine acts as a local anæsthetic in the case of the rabbit. In practical medicine it is noteworthy that emetine induces vascular constriction and raises the normal circulation. This stimulation takes place even when the circulation is retarded by artificial means; it is even possible to revive the circulation with the aid of pure emetine hydrochloride after artificially inducing its complete stasis.—Merck's *Bericht*, 1901, p. 75.

ATOMS AND ELECTRONS.

G. Martin is of opinion that atoms give rise, when shattered, to three distinct kinds of particles:—(*a*) Positively and (*b*) negatively charged particles (electrons) which are deviable in different degrees by magnetic and electrical influences; (*c*) inactive particles, composed of the unelectrified matter which composes the bulk of the atoms. In support of his views he points out that Lockyer's observations on the spectra of the different stars seem to show that heat does split up elements, and that the "radiant matter" of Crookes is supposed to consist of atoms which have been shattered by an electric discharge and reduced to small particles, some of which have been proved to be electrons, by J. J. Thomson, Becquerel, and others. M. and Mdme. Curie have also proved that radio-active matter gives off electrons and probably other particles at ordinary temperatures, while there is strong experimental evidence to support the view that hot bodies generally give off electrons, since gases, carbon, etc., increase in conductivity at high temperatures. Further, it has been shown that hot bodies can discharge electroscopes in the same way as radio-active substances, while hot metals can similarly change electroscopes, the inference being that electrons are given off by the heated metals etc., experimented with, just as radio-active substances do at ordinary temperatures, and that heat thus induces radioactivity in bodies.—*Chem. News*, **85**, 206.

RADIO-ACTIVITY OF ELEMENTS.

G. Martin considers that the peculiar behaviour of the radio-active elements may be due to decomposition or dissociation, at ordinary temperatures, into substances of simpler constitution; the change from a higher to a lower grade of combination being attended by the loss of one or more electrons by the respective atoms. In other words, radio-activity is nothing less than the outward manifestation of the fact that, as the temperature rises, an element appears to acquire a steadily increasing facility for parting with electrons usually retained by it at lower temperatures. Corresponding to each individual element, there would appear to be a temperature range within which the degree of electrotonic stability has become so marked that the electrons are spontaneously cast forth and, when that occurs, the element is in a radio-active condition. Probably all elements behave in a similar manner at suitable temperatures, the only difference between the so-called radio-active elements and other elements being that the decomposition range begins at higher temperatures in the case of elements with lighter atomic weights, since the temperature at which radio-activity is induced appears to augment rapidly with decreasing atomic weights. Thus, a ferrous atom contains only two electrons, whilst a ferric atom contains three; at ordinary temperatures iron exists most stably in the ferric state, but at a higher temperature the element finds its state of maximum chemical repose in the ferrous state, one electron being apparently lost as the temperature rises and the radio-active condition is attained. According to this hypothesis, then, radio-activity is a general condition of matter and, since the loss of electrons is accompanied by loss of weight, the radio-active elements may be regarded simply as elements which, under given conditions of temperature and pressure, are suffering incipient decomposition. In support of this view is the well-known fact that at high temperatures all substances become almost completely ionised, while zinc and many other substances slowly give off electrons at ordinary temperatures and, as Russell's experiments have shown, are thus capable of affecting a photographic plate in the dark.—*Chem. News*, **85**, 205.

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SOLID CO_2 FROM SPARKLETS.

Professor R. W. Wood points out that solid carbon dioxide can be obtained from the "sparklets" now sold everywhere for the aëration of beverages, the larger of the two sizes giving the best yield. It is best to cool the sparklet in ice and salt for a few minutes before the experiment, and doubtless the amount of solid obtained would be still further increased by chilling the metal reservoir with which the bottles are fitted. A small square of black velvet should be held, or tied with a turn or two of string, over the end of the tube which, in the ordinary use of "sparklets," delivers the gas into the liquid to be aërated. The nap of the cloth should be on the inside, and the part over the tube should form a little bag about the size of a marble. On discharging the sparklet and quickly removing the bag, the interior will be found to be lined with the snow-white solid, with which a small drop of mercury can be easily frozen. The substance shows off most beautifully on the jet black surface of the velvet.—*Nature*, **66**, 15.

SOURCES OF INDIGO.

D. Prain and E. Baker have published a series of notes made during the course of an examination of some of the types of the older species of *Indigofera*, the primary object of the examination having been the elucidation of the synonyms, etc., of the indigo-yielding species. Notes on some other species are also included, but the various forms which have been included in the species *Indigofera tinctoria*, L., and *Indigofera anil*, L., receive the fullest treatment, and the authors come to the following conclusions:—*I. tinctoria*, L., has been applied to three forms: (1) The wild form, which is probably indigenous to Africa; (2) the variety of the previous one, cultivated in southern India, at the present day more especially in Madras; (3) the plant cultivated in northern India, known as "Nil"; the differences between this and the other cultivated variety are so pronounced and constant that it seems justifiable to separate it off, when it becomes *I. sumatrana*, Gaertner. The specific name *anil*, also given by Linnæus, is connected with the Egyptian vernacular word "Nil," which indicates any species that supplies the indigo dye. In Egypt the word "Nil" would refer to *I. articulata*, Gouan, in India to *I. tinctoria*, L., while in neither of these countries would it include *I. anil*, L., which will not grow in Egypt and does not find favour in southern India. De Candolle instituted three varieties of *I. anil*, L., of which variety *α-oligophylla* is the same plant as *I. truxillensis*, H.B.K., which was probably cultivated in the West Indies in the time of Hans Sloane, while variety *β-polyphylla* is the plant now cultivated in the West Indies and other parts of the New World. This is the true *I. anil*, L., but to avoid any confusion which may arise from the use of that specific name, it is suggested that it should be established, under another synonym, as *I. suffruticosa*, Miller.—*Journal of Botany*, **40**, 60 *et seq.*

PERMEABILITY TO AIR OF TRACHEID WALLS. It seems to be definitely established that cell-walls of cellulose or cork are more permeable to air when wet than when dry. In the case of lignified cell-walls the conclusions are not so unanimous. The latest investigator, who measured the amount of air extracted from blocks of coniferous wood, finds that the air passes through more readily when the walls are wet, and suggests that where the contrary result was obtained, it has been due to the rupture of the dry membrane, when obviously the air passes more readily.—*Flora*, **88**, 422.

HETEROSPORY IN FERNS. Heterospory in the true ferns existing at the present day is limited to the artificial group of Hydropterideæ, or water-ferns. Renault, when examining fossils from the "silex de Grand Croix," found mega- and micro-sporangia associated in two instances. In the one instance, the sporangia were grouped together, sessile, without annulus, and showing longitudinal dehiscence, whence Renault identified them as a species of *Asterotheca*, associated with Marattiaceæ (*Comp. rend.*, **133**, 648). The other sporangia have not such distinctive characters, and on somewhat slender evidence they are considered to be allied to the Parkeriaceæ, now confined to one genus, *Ceratopteris.*—*Comp. rend.*, **134**, 618.

PREPARATION OF FLUID EXTRACTS. Warin has published, as a thesis, a comparative study of the preparation of certain fluid extracts, in which he compares the fluid extracts obtained by the processes of the British, United States, German, French, and Swiss pharmacopeias. The following are the drugs dealt with by Warin:—Burdock, cascara, coca, condurango, ergot, grindelia, hamamelis, hydrastis, cola, sarsaparilla, viburnum. The results are interesting, but the author fails to show that the best of the processes tried is in itself a good one. Thus, while the process of the German Pharmacopœia is commended as the best for the preparation of liquid extract of ergot, it must be observed that the finished product contains only 0·048 per cent. of ergotinine, whereas the drug itself would probably (it was not assayed) contain about five times as much. In other words, in this particular case only one-fifth of the alkaloid in the drug appears in the fluid extract. A similar result was obtained by Meulenhof. Thus the best of the processes compared is not necessarily a good one.

FRUITS OF PACHIRA. A series of specimens of *Pachira aquatica*, Aubl., and *P. insignis*, Savigny, from British Guiana, collected by the late G. S. Jenman, F.L.S., Government Botanist, to illustrate the great variation which exists in the size and shape of the fruits, was exhibited by Mr. R. A. Rolfe, at a meeting of the Linnean Society, held on April 3. It appears that the two species are best distinguished by their flowers, those of *P. insignis* being very large and having broad crimson petals of considerable substance, while those of *P. aquatica* are smaller, and the petals light yellow, narrower, and of more slender texture. No distinguishing character had been detected in the fruit, which, though varying greatly in size and shape, seems almost to duplicate itself in the characteristic forms of the two species. In both, the shape varies from fusiform-oblong and considerably elongated to shortly elliptical, with a series of intermediate forms, as seen in the series exhibited. There is also a certain amount of variation in the leaves and flowers, though in the latter each species retains its own essential character. The trees are common over the great alluvial forest-region, extending also to Brazil, and are commonly cultivated for ornament.

THE REGISTRATION OF PHARMACEUTICAL STUDENTS.

HOW THE CASE NOW STANDS IN SCOTLAND.

BY T. MABEN, GLASGOW.

The decision of the Council of the Society at its last meeting to allow candidates who hold a certain number of leaving certificates to complete their examination in the subjects necessary for registration as pharmaceutical students under any of the examining bodies whose certificates are recognised by the Council, will prove a very great boon to Scotch apprentices, and the Council deserves the thanks of the trade for the prompt settlement of that matter. I am not sufficiently optimistic to believe that this new regulation will solve the "apprenticeship problem," but I am certain, from my own personal knowledge, that it will remove what has been a stumbling-block to many otherwise likely apprentices in the way of their choice of pharmacy as a profession.

Now that the Council has decided to accept what we may call mixed certificates, it will not be out of order, I hope, if I state the actual position so far as Scotch apprentices are concerned. At the risk of repeating myself, *ad nauseam*, I will once more point out that very few young men of the class from which our apprentices are drawn in Scotland have the time to acquire all the certificates necessary for registration before leaving school. It is well known that our requirements in the matter of leaving certificates are identical with those of the General Medical Council; but there is this difference between pharmacy students and medical students, that while the former usually begin their apprenticeship at about sixteen, the latter, as a rule, continue at school a couple of years longer, entering the universities about seventeen or eighteen. In the great majority of cases, therefore, Scotch medical students pass their registration examinations before leaving school, while that is rarely the case with pharmacy students, only an insignificant minority possessing, when they leave the school, the certificates required for registration. At the same time every boy, when he leaves a secondary school in Scotland, ought to be in possession of two or more certificates; some of them even possess certificates sufficient to cover five of the six subjects required for registration as students of pharmacy. Hitherto these certificates have been of no use; now, thanks to the Council, they can all be utilised, at least, such of them as have been passed in one year or "at one examination." Here then is the new position in Scotland. Suppose a boy leaves school having passed, say, in four subjects, namely, English and Mathematics, the latter embracing Arithmetic, Algebra, and Euclid, these certificates having been obtained in the same year. He has still two subjects to pass, namely, Latin and French (or German), both of which he must take at one examination.

So far as Scotland is concerned there are three examining boards from which a choice may be made, viz., the College of Preceptors, the Educational Institute of Scotland, and the Joint Board of the Scotch universities which conducts the Medical Preliminary Examinations. Each of these three has points which recommend it to the notice of students. All three conduct examinations two or three times each year, the university towns being the usual centres, but in the case of the College of Preceptors, that body will arrange to conduct its examination in any part of the country, provided certain conditions are fulfilled. Considering that the examination may be spread over several days, this is a very great boon, and, combined with the fact that the range in each subject is much less extensive than in the other two boards, I am led to believe that the College of Preceptors will be the favourite medium for students desiring to complete their certificates. The special advantage of the Educational Institute examination is that it is conducted throughout by Scotch teachers, who are constantly engaged in practical teaching. There is, therefore, a presumption that they are more familiar with Scotch methods of teaching and with the working of the native brain. The remaining avenue is the most difficult of the three, but it will possess a fascination for a certain number of students, inasmuch as those who complete their certificates by taking the Joint Board examination at any of the universities will be able to take advantage of the Tocher scheme and also to register as medical students, should they desire to do so. Up till this year it has not been possible to utilise the lower grade certificates in this way, but since January 1 the universities recognise mixed lower grade certificates and Joint Board certificates, so long as the examinations have been passed at not more than two sittings. It is true that this preliminary examination is not sufficient for the B.Sc.Pharm. degree proposed in Mr. Tocher's scheme, but it is sufficient for registration as a medical student, and consequently pharmacy students possessing this mixed certificate are able to participate in all the benefits to be derived from the Carnegie trust.

The proper course for pharmacists to take is, in the first instance, to see that their prospective apprentices should before leaving school sit for as many leaving certificates as possible. Even if they already possess one or two certificates, they should again sit in these same subjects, and as many more as there is the chance of their passing, in order that they may have passed in as many subjects as possible at one examination. The remaining subjects can then be passed at one examination under any one of the three boards specified above which the student may select. Let me add that the ideal method is for the student to take all his certificates before he leaves school, and it will be a bright day for pharmacy in this country when public opinion is sufficiently educated to make the realisation of such an ideal the rule rather than the exception.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

MEETING OF THE COUNCIL.

WEDNESDAY, MAY 7, 1902.

Present:—

Mr. G. T. W. Newsholme, President;

Mr. C. B. Allen, Vice-President;

Messrs. Atkins, Carteighe, Cooper, Corder, Cross, Gifford, Glyn-Jones, Harrington, Harrison, Hills, Park, Robinson, Symes, Taylor, Wootton, Young.

The minutes of the previous meeting having been read and confirmed,

The President announced that letters had been received from Mrs. Hawtayne, thanking the Council for its expression of sympathy at the death of her husband, the late Mr. George H. Hawtayne, and from Mr. Percy Randall, acknowledging the letter of condolence sent by the Council on the death of his father, Mr. W. B. Randall. A letter had also been received from Mr. F. Andrews, thanking the Council for its kind appreciation of his services as Divisional Secretary for South Paddington.

Letter to the Privy Council.

The Secretary then read the following letter, which had been sent to the Privy Council in accordance with the resolution passed at the last meeting of the Council (see *ante*, p. 296):—

17, Bloomsbury Square,
London, W.C.
April 16, 1902.

The Clerk to the Council,
Privy Council Office, S.W.

Dear Sir,—The Council of this Society has had under its consideration the Report of Dr. Stevenson on the Examinations held by Board of Examiners for England and Wales during the year ending March 31, 1902.

In accordance with the request of the Lords of the Council I directed special attention to Dr. Stevenson's remarks in that report with respect to the necessity for the institution of compulsory courses of instruction in at least Chemistry and pharmacy.

I am desired to state in connection therewith that the Council of this Society is much gratified to find that the Lords of the Council now recognise that the establishment of compulsory courses of instruction is highly desirable—in fact practically essential.

More than twenty years ago the late Dr. Greenhow in his reports on our Examinations urged this view, and Dr. Stevenson has persistently reiterated the same recommendation.

As a result of Dr. Greenhow's representation this Society in 1885 formulated and approved Bye-laws providing for the division of the qualifying Examination, and the institution of periods of study between the portions of the same.

Official approval of those Bye-laws was withheld by the Lords of the Council, as they had been advised that any condition precedent to a candidate presenting himself for examination would be beyond the powers of the Society.

The Council of this Society has since made the following attempts to obtain the necessary powers, by legislation, for bringing about the course which, in view of the opinion of the Privy Council Visitors, has appeared so essential:—

The Pharmacy Acts Amendment Bill, 1887, introduced into the House of Commons.

The Pharmacy Acts Amendment Bill, 1888, introduced into the House of Lords and brought to the Commons in March of that year.

The Pharmacy Acts Amendment Bill, 1891, introduced into the House of Commons.

As these were Private Bills it was found impracticable to carry them through.

In addition to the above, several draft Bills have been prepared by the Council, the latest of which is now before your Department, and our Council hopes that it may have the support of the Department in its efforts to secure the desired legislation.

I desire to point out that the Council of this Society, whilst unable to enforce a curriculum, has for some years put forward the recommendation that all candidates before presenting themselves for Examination should receive a systematic course of instruction occupying a period of no less than six months; and that such period of study should include at least 60 lectures in Chemistry, 18 hours' work in each week in Practical Chemistry, 45 lectures and demonstrations in Botany, and 25 lectures and demonstrations in Materia Medica.

This recommendation is printed on every copy of the Syllabus of the Examinations issued by me, so that every intending candidate has it before him.

I enclose a marked copy.

I am, yours faithfully,
(Signed) Richd. Bremridge,
Secretary and Registrar.

The Secretary then read a letter from the Clerk of the Council, acknowledging receipt of the foregoing communication. He also stated that a letter had been received from Mr. T. Tickle, stating that he would be pleased to comply with the request of the Council to attend the Congress to be held at Exeter during August in connection with the Royal Institute of Public Health.

The New Bye-Laws.

Mr. Carteighe then moved, and it was carried, that the new Bye-Laws, which were read a first time at the meeting of the Council held on April 9, 1902, and printed as a special supplement to the *Pharmaceutical Journal* of April 12, 1902, be now confirmed.

Special General Meeting.

Mr. Carteighe next moved, and it was seconded by Mr. Robinson, and carried, that a special general meeting of the members of the Society be held at 17, Bloomsbury Square, London, W.C., on Wednesday, May 28, 1902, after the conclusion of the business of the annual general meeting, for the purpose of transacting the following business:—

(*a*) To consider, and if thought proper, to confirm and approve new Bye-Laws to be submitted by the Council to the said meeting in accordance with the provisions of the Royal Charter of Incorporation of the Society, and of the Pharmacy Acts, 1852 to 1898.

(*b*) To consider, and if thought proper, to adopt the following recommendation of the Council prescribing an addition to Clause 3 of the Poison Regulations passed in accordance with Section I. of the Pharmacy Act, 1868:—

> That the word "and" preceding the word "lotions" be deleted, and that the words "and liquid disinfectants" be added immediately after the word "lotions."

Clause 3 of the present Poison Regulations is as follows:—

3. That in the dispensing and selling of poisons all liniments, embrocations, and lotions containing poison be sent out in bottles rendered distinguishable by touch from ordinary medicine bottles, and that there also be affixed to each such bottle (in addition to the name of the article, and to any particular instructions for its use) a label giving notice that the contents of the bottle are not to be taken internally.

Election of Members.

The following persons, having tendered their subscriptions for the current year, were elected "Members" of the Society:—

Armstrong, Thomas; Maybole
Attwater, Thomas Chipping; Bude
Barrett, Walter Ernest; Leeds
Barritt, Edward C.; Dalston
Brown, Percy J.; Dalton-in-Furness
Cox, Horace Nelson; Edinburgh
Davies, Henry Charles; Croydon
Delve, William Henry; Manchester
Dotchin, W. A.; Monkwearmouth
Dutton, Herbert G.; Bradford
Evans, John William; Rhuddlan
Everett, Henry Percy; Hove
Fletcher, Edward Norman; Halifax
Foster, James; Ellesmere
Fry, Albert; Clapham
Gittins, Samuel Ernest; Norwood
Glaholm, Wm.; Hebburn-on-Tyne
Goodyer, William; Spalding
Hill, Arthur Chas.; Ellesmere
Horniblow, Kate Nellie; Charlbury
Johnson, Herbert T.; Pateley Bridge
Jones, Arthur Alderson; Liverpool
Jones, Benjamin S.; Chester
Kenney, G. W.; Moreton-in-Marsh
Kenway, Bertha Anne; Clapham
Lowe, Frances W.; Bristol
Millar, Benjamin; Darlington
Orme, John William; Chelsea
Parker, Benjamin; Derby
Pugh, Francis Charles; Liverpool
Seedhouse, W.; Leighton Buzzard
Sharp, Jeremiah; Manchester
Spicer, William Scutt; Wareham
Spruce, Charles F.; Llandudno
Spurin, Stanley Russell; Plymouth
Stevenson, James Ross; Paris
Tracy, Charles Henry; Dorking
Trott, Edward Henry; Withington
Whittingstall, Ernest E.; Ashbourne
Yates, Frances Harold; Blackpool
Yates, Henry Henley; Swinton

Election of Student-Associates.

The following persons, having tendered their subscriptions for the current year, were elected "Student-Associates" of the Society:—

Bartleman, George H.; London
Bernhardt, Leopold; London
Clarke, Arthur Stanley; Malvern
Crisp, F. W.; Moreton-in-Marsh
Dwyer, Walter James; London
Freeman, John E.; King's Lynn
Hay, William; Hull
Hill, Fred.; Cheltenham
Jones, William J.; Bodedern
Lewis, Dan; Clynderwen
Lorimer, Douglas J.; Southampton
Moss, Edgar; Burslem
Powell, William Guy; Egginton
Richards, Philip D.; Ogmore Vale
Thompson, Harry G.; Blackburn
Wickham, Thomas B. C.; Weston-super-Mare
Wolff, Hugo; Chester

Several persons were restored to membership upon payment of the current year's subscription.

Diplomas.

The undermentioned, being duly registered as Pharmaceutical Chemists, were respectively granted a diploma stamped with the Seal of the Society:—

Barritt, Percy
Baxter, Alexr. Cooper
Bennett, Reginald Robert
Bintcliffe, John Wm.
Cocking, Thos. Tusting
Girling, William Robert
Hanbury, Fredk. Copel
Hill, Arthur Chas.
Hills, James Stuart
Hole, Wm. Westcott
Hooper, Elsie Seville
Hunt, Geo. Paul Allen
Jones, John William
Male, Chas. Edgar
Neathercoat, Ernest Tom
Paterson, Alexr. Gustave Clive
Phillips, Horace Stock
Reavley, Robert
Robinson, Richard Atkinson
Rodwell, Henry
Smith, John Beddall
Walker, Geo. Turton
Young, Wm. Lyndale

Election of Honorary Members.

The President moved the election of the following gentlemen as honorary members of the Society:—

Brandis, Sir Dietrich..	K.C.I.E., Ph.D., F.R.S., Corr. M.P.S.
Guignard, Léon	Director of the High School of Pharmacy, Paris.
Hanbury, Sir Thomas ..	K.C.V.O., F.L.S., Corr. M.P.S.
King, Sir George	M.B., K.C.I.E., F.R.S., Corr. M.P.S.
MacAlister, Donald....	M.D., Chairman of the Pharmacopœia Committee of the General Medical Council.
Saunders, William	F.R.S.E., F.L.S., Corr. M.P.S.
Sorby, H. C............	D.Sc., F.R.S.. Vice-President, University College, Sheffield.
Stockman, R.	M.D., F.R.C.P.E., F.R.S.E., Professor of Materia Medica, etc., Glasgow University.
Wiesner, Julius........	Ph.D. Corr. M.P.S., Professor of Plant Anatomy, etc., Botanico-Physiological Institute, Vienna.

It was hardly necessary, said the President, to give detailed particulars about those gentlemen, because the Council at the previous meeting had fully considered the advisability of adding their names to the list of honorary members.

The motion was unanimously agreed to, and

Mr. Wootton suggested that it might be desirable, when notifying the new honorary members of their election, to ask for their photographs. He thought it would be interesting to have a collection of signed photographs of the Society's honorary and corresponding members.

The President expressed his approval of the suggestion.

Mr. Carteighe said he took it that Mr. Wootton meant that if such a request was sent to the new honorary members it would afford a good opportunity of making a similar request to existing honorary members.

Election of Corresponding Members.

The President moved that the following gentlemen be elected as corresponding members of the Society:—

Freeman, W. G.	B.Sc., F.L.S., Department of Agriculture, Barbadoes.
Jadin, Fernand	Professeur Agrégé (Vegetable Anatomy), School of Pharmacy, Paris.
Prain, David	Surgeon-Major, M.B., F.R.S.E., Botanic Survey of India.
Thoms, Dr. H...........	Professor of Chemistry, University of Berlin.

In asking those gentlemen to become corresponding members, he felt that the Society would not only honour them, but would be conferring an honour upon itself.

The motion was agreed to.

North British Branch Executive.

The President having announced that a report had been received from the North British Branch Executive,

The Secretary read the following

Summary of the Annual Report of the Executive.

The Executive has met four times during the year and has considered and transmitted to the Council an important draft scheme for securing a course of training for pharmaceutical students in the four Scottish universities, of the principle of which the Council has expressed approval.

The Executive has also considered a modification of the conditions governing the acceptance of preliminary examination certificates and transmitted a recommendation to the Council, which has been approved.

The Jubilee of the institution of the Branch and the Diamond Jubilee of the Pharmaceutical Society were celebrated by a dinner of Scottish pharmacists in December.

The evening meetings had been successful and fairly well attended. At the same time, it was felt that they were not by any means so well attended as they might be. This was the more to be regretted because the Executive felt assured that the opportunities for social intercourse furnished by these meetings did much to further the interests of the Society and its members and student-associates.

The Library showed an increase of 549 volumes circulated, and the increase was in both town and country readers.

The question of local organisation had received the careful attention of the Executive. The Divisional Secretaries in Glasgow district and in Aberdeen had had their respective areas defined, and lists of the registered chemists in each division had been prepared. Much yet remained to be done in the other districts. The Executive cordially recognised the loyal way in which the Divisional Secretaries had responded to all the calls made upon them, especially in regard to supplying local information on important questions at present occupying the attention of the Council. The experience of the last year had convinced the Executive that the scheme of local organisation was fitted to be a powerful instrument in furthering the objects of the Society, and were impressed with the importance of maintaining it in a condition of the greatest possible efficiency.

The President moved that the report be received and recorded in the minutes.

Mr. Robinson asked whether copies of such reports should not be supplied to members of the Council?

The President explained that copies were usually supplied, but in the present case the report arrived too late for copies to be prepared.

Mr. Robinson said he asked on principle, because it was impossible to follow a report when read.

The President said he quite agreed with Mr. Robinson; the report should have been received earlier.

The motion was carried.

Finance Committee.

The report of this Committee recommended the payment of sundry accounts, and included the following items:—

	£	s.	d.
General Fund account	4,301	0	7
Benevolent Fund account	703	14	9
Donation account	223	0	0
Orphan Fund account	43	14	6
Submitted for payment	2,161	18	4
including the following:—			
Journal and printing	533	8	2
Examiners' fees	523	9	7
Current expenses	450	0	0
Taxes and insurance	288	3	3
Repairs	109	9	10
Salaries	90	8	4
Sundries	166	19	2

The Committee also recommended that the expenses in connection with the Jacob Bell Scholarships Examination and the Council Prizes Examination be defrayed from the General Fund account.

The President, in moving the adoption of the report, said that the report at this time of the year dealt with a considerable sum of money because of the subscriptions received from members. The receipts also included the sum of £15 15s. from the Chemists' Ball. He was sure the Council was very gratified to receive, year after year, these sums from the Chemists' Ball, and even those who did not appreciate dancing would appreciate them. There was also a legacy of £19 19s. left by their old friend, Mr. Martindale, which came to the Society as £17 19s. That sum had been left by Mr. Martindale for the Library of the Society. In regard to the costs of the Jacob Bell Memorial Scholarships Examination, it would probably be remembered that formerly that examination was held at the centres where the Preliminary Examination was held, and was practically no cost itself. Now, however, that no Preliminary Examinations were held, it would, he thought, be unfair that the cost of conducting the Bell Scholarships Examination should be borne by the Memorial Fund. Therefore the Committee recommended that the expenses be borne by the General Fund of the Society. That also applied to the Council Prizes Examination.

The report of the Committee was adopted.

Benevolent Fund Committee.

The report of this Committee included grants to the amount of £23 in the following cases:—

Registered chemist and druggist (76) Has had previous grants. Caistor.

Registered chemist and druggist (76). Has had previous grants. Surbiton.

The Vice-President moved that the report be adopted.

Mr. Cooper said it seemed to him an opportune time to direct attention to the fact that so many people were not eligible to participate in the benefits of the Orphan Fund, founded by Mr. Thomas Hyde Hills. He thought it was not sufficiently widely known that this fund existed for the purpose of assisting or purchasing the election of orphans of members of the Society who had been subscribers to the Benevolent Fund for three years and upwards to orphan schools or asylums. It had often seemed to him, since he had been a member of the Benevolent Fund Committee, that there must be a want of information on the part of members of the Society; otherwise candidates would avail themselves of the benefit of the Orphan Fund more than they do. He thought many more subscribers to the Benevolent Fund could be secured if interest was taken in it by the younger generation of pharmacists, and in that connection he stated that his son had recently obtained several new subscribers to the fund with very little trouble, and he had just received a telegram from a gentleman to say that he would subscribe one guinea to the fund. Mr. Cooper then went on to suggest that greater interest in the Benevolent Fund might be created if a Benevolent Fund banquet were held each year, invitations being sent to the manufacturers and proprietors of the numerous proprietary articles distributed by chemists. By that means he believed the Benevolent Fund could be made a real living thing. So far manufacturers and proprietors had not been given the opportunity of subscribing to the fund, but he thought chemists had a right to expect them to subscribe, seeing that something like ten thousand chemists were distributing their goods.

The President said, in regard to the Orphan Fund, the difficulty was that the orphans had not come forward to claim the benefit of the fund. It was a fact that many would have been eligible if their parents had subscribed 2s. 6d. to the Benevolent Fund. He supposed what Mr. Cooper desired was to see every chemist in the country subscribing to the fund.

Mr. Cooper: Yes; I should like to see every assistant a subscriber of, say, 2s. 6d. to the fund.

The motion was then carried.

Library, Museum, School and House Committee.

The report of this Committee read as follows:—

1. The Library, Museum, School and House Committee met on April 15 and 30, 1902. The usual monthly statements respecting the Society's libraries and museums in London and in Edinburgh were received on April 15, and particulars of these statements are published in the *Pharmaceutical Journal* for April 19, 1902.

2. The Committee dealt with various administrative matters relating to the superintendence of the School and House and the proper and efficient conduct of the other departments of the Society under the charge of the Committee.

3. The School staff reported the resignation of a demonstrator, and the Committee recommends the appointment of Mr. R. R. Bennett, and on their recommendation three students who had passed the Major Examination in April were admitted as workers in the Research Laboratory for the remainder of the session.

4. Messrs. Parkinson and Son's account for £109 9s. 10d. was submitted and passed for payment.

5. Conduct of Shops.—The Committee considered a letter from one of the Divisional Secretaries of the Society, suggesting the desirability of collecting statistics concerning the conduct of shops where drugs are retailed. It was decided that, in the absence of statutory powers, the suggestion was not practicable.

6. Ground Rents.—The Committee authorised the purchase of certain fencing protecting a portion of the Society's property at Shortlands, Kent; and, on the recommendation of the Surveyor, accepted an offer for the rental, on lease, of some of the vacant land.

7. Annual Report.—The draft annual report was considered, amended, and ordered to be forwarded to the Council for consideration on May 7.

8. Journal.—The report of the Sub-Committee was presented, and dealt with correspondence with the Editor respecting the size of a normal number of the Journal, and also in respect to the supply of certain information which the Editor had been requested to furnish. The report was received and confirmed, and the substance of one of the letters was ordered to be recorded in the minutes.

9. Research.—The Committee received reports from Professors Collie and Greenish on the work proceeding in the Research Laboratory. On the recommendation of Professor Collie, Mr. A. G. C. Paterson was nominated for appointment as Redwood Scholar for the session 1902-3. A small Committee was appointed to take into consideration certain points in connection with the investigations undertaken by the Society at the request of the General Medical Council.

The President moved that the report be received and adopted. With reference to paragraph 6, he might say that the fencing referred to was the property of one of the Council's tenants. The sum of £5 had been paid for it, and he thought it was money well spent, as it would help to keep the property intact. In regard to the plot of land which had been leased to an adjoining tenant, if it had not been so leased the land would have been vacant and unremunerative; but now the Council would have the satisfaction of getting rent for the land, while it would constantly be increasing in value.

Mr. Harrington seconded the President's motion.

Mr. Glyn-Jones said he thought it would be advisable for the report to be discussed in committee. He would like to make a few remarks on paragraph 8, which dealt with the Journal, and he thought members of Council would agree that the matter should be discussed in committee.

The President said that if the Council agreed with Mr. Glyn-Jones's suggestion, it would be better to take the matter after the other public business.

This was agreed to, and the discussion on the Library Committee's report was adjourned till after the public business had been transacted.

Appointment of Divisional Secretaries.

On the motion of the President, Mr. Daniel Arnott, of Pontypridd, was appointed Divisional Secretary for Glamorgan East, and Mr. Owen I. Jones, of Llanrwst, was appointed Divisional Secretary for Denbigh West.

The President said he wished to take that opportunity of stating that there are several places in England, Wales, and Scotland where the Society is not yet represented by Divisional Secretaries. And he might say, for the information of one of his colleagues on the Council, that the town of Norwich was still unrepresented.

Mr. Corder said he had mentioned the matter to several members of the Society in Norwich, but they did not seem inclined to accept the office.

Mr. Glyn-Jones asked if a member of the Council was debarred from acting as Divisional Secretary.

The President: No.

The Redwood Scholarship.

On the motion of the President, Mr. A. G. C. Paterson was appointed as Redwood Scholar to work in the Research Laboratory of the Society.

Appointment of a Demonstrator.

Mr. R. R. Bennett was then appointed as Demonstrator in the Chemical Laboratory of the School of Pharmacy.

General Purposes Committee.

The portion of the report of the General Purposes Committee containing the recommendations as to the awards of prizes was read as follows:—

Pereira and Council Prizes.

Professors Arthur Smithells and Michael Cresse Potter and Mr. Prosper H. Marsden, who had been appointed to conduct this examination, had reported that thirteen candidates had entered for this competition, and that four had obtained the requisite standard of efficiency for the awards. The envelopes bearing the mottoes of the first three successful candidates having been opened, were found to contain the names of

John William Patterson
William Tyndale Young
Reginald R. Bennett

The following are the mottoes of the remaining competitors who completed their papers. The mottoes are arranged in order of merit:—

4 Lux et Tenebræ
5 Acacia
6 Domine dirige nos
7 Marcus
8 Nil desperandum
9 Edina
10 Welburn
11 Ultimus
12 Pharmacy
13 Umbel

The following awards were therefore made in accordance with the report of the examiners:—

1.—Pereira Medal (Silver) and Books, value £5, presented by the late Thomas Hyde Hills—John William Patterson.

2.—Pharmaceutical Society's Medal (Silver)—William Tyndale Young.

3.—Pharmaceutical Society's Medal (Bronze)—Reginald R. Bennett.

Acceptance of a Certificate.

The report of the Committee also recommended that the Board of Examiners be authorised to accept a certificate of the Apothecaries' Society, submitted by Mr. J. W. A. Brookes, who had applied for registration as an apprentice or student. The Board of Examiners in Scotland reported that a sub-committee had been appointed to consider such important educational matters as may arise.

Report of Examinations.

April, 1902.

	Candidates.	Passed.	Failed.
England and Wales:—			
Major	42	20	22
Minor	315	90	225
	357	110	247
Scotland:—			
Major	3	3	0
Minor	122	43	79
	125	46	79

Certificates were received from thirty-four persons who had applied for registration as Apprentices or Students.

The President said that the certificate of the Apothecaries' Society was formerly on the list of those certificates accepted in lieu of the Preliminary Examination. It was a certificate which included the subjects required, and was granted in connection with a preliminary examination for the medical profession. If the old Preliminary Examination had been in existence, the certificate would have been accepted by the Board, but it was now necessary for it to come before the Council in the present form. With reference to the sub-committee appointed by the Board of Examiners in Scotland, he might say that a similar sub-committee was appointed by the London Board some time ago.

Jacob Bell and Manchester Scholarships.

The **President** moved, and it was agreed, that Mr. T. Tickle and Mr. Pinches be appointed to conduct the examinations for the Jacob Bell and Manchester Scholarships in June next.

Division of the Minor Examination.

Dr. **Symes**, pursuant to notice of motion, moved:—

That the letter sent by the Privy Council at the end of 1885 or beginning of 1886 to the Council of the Society in regard to the alteration of Bye-Laws be read.

He said his reason for doing so was that at the last meeting of the Council, when he brought forward a motion in reference to the division of the Minor Examination, he was anxious to show that there was nothing to block the way, and he referred to the letter in question, which showed that the Council of the Society could not impose any conditions precedent to examination, but that that only applied to a curriculum, and not to dividing the examination. That statement he believed to be correct. Then, when Mr. Glyn-Jones was speaking, he quoted the words "conditions precedent to examination," and Mr. Carteighe said "or to divide," implying that those words had been left out, and that the omission made considerable difference to the argument. Subsequently, when he (Dr. Symes) was replying to the points raised, Mr. Carteighe interposed with the remark, "'Periods of time between portions of examination.' I do not want to quarrel with you, but you must give your quotations correctly." Seeing that this particular letter materially affects the question at issue, he thought it would be better for the letter to be read, so that the Council might know exactly what is stated therein, and whether it is a block to progress in the future. He believed that the letter had no reference whatever to division of the examination, and that the words he quoted were correct. This was not purely a personal matter. He was of opinion that the Council ought to know what was in the letter, so that it should not be brought forward to block the way to the particular matters attributed to it.

Mr. **Harrison** seconded the motion.

The **President** pointed out that the letter in question had not been kept back, inasmuch as it was published in the annual report of the Council for 1886, and he personally had also mentioned it at the August meeting of Council last year.

The Council having signified its approval of the motion, the **Secretary** read the letter, which was published in the Journal for May 8, 1886; also a subsequent letter from the Privy Council published in the Journal for July 10, 1886. The text of the letters was as follows:—

Council Office, January 28, 1886.

Sir,—Adverting to your letter of the 17th July last and to other correspondence on the proposed alterations in the Bye-Laws of the Pharmaceutical Society of Great Britain which have been passed by the Council and were confirmed on the 2nd July at a special general meeting of the Society, I am directed by the Lord President of the Council to state that his lordship is advised that the alterations in the existing Bye-Laws cannot, as they now stand, be properly confirmed by the Privy Council.

The Lord President is also advised that the members of the Society, assembled in special general meeting, have no right to propose amendments to the formulas referred to them under Section IV. (1), but that they have a right to have the formula relating to each Bye-Law referred to them separately; that they cannot be required to accept or reject the propositions of the Council *en bloc*; that if the formulas were not submitted separately, the alterations in the Bye-Laws cannot properly be confirmed by the Privy Council till this has been done; that the formula relating to a Bye-Law cannot be altered by the Council at either of the two subsequent meetings of the Council held under Section IV. (1), but can be confirmed only; that if the formula relating to any Bye-Law has been so altered at a second or third meeting, the alteration in the existing Bye-Law cannot properly be confirmed by the Privy Council; that Bye-Laws which impose any precedent conditions upon persons who tender themselves for examination, under the provisions of the Pharmacy Act, 1868, are contrary to Section VI. of that Act.

This observation does not apply to reasonable regulations for securing order and efficiency in the examination itself, or for enabling the examiners to have proper materials before them upon which they can be satisfied as to the qualifications of the persons examined before they grant the certificates, provided that such regulations do not prevent free access to the examinations.

For the above reasons his lordship is advised that the altered Bye-Laws, Section X., Nos. 11, 12, 24 and 25 cannot properly be confirmed by the Privy Council.

I am, Sir,
Your obedient servant,
C. L. Peel.

The Secretary,
Pharmaceutical Society,
17, Bloomsbury Square, W.C.

The President of the Pharmaceutical Society,
17, Bloomsbury Square, W.C.

Sir,—With reference to your letter of the 13th March last, with regard to the proposed alterations of the Bye-Laws of the Pharmaceutical Society, in which you call attention to the last paragraph but one of my letter of the 28th January last, I am directed by the Lord President of the Council to state that that paragraph was not intended to convey that it would be competent for the Board, by any regulation, to require evidence of (say) a three months' course of instruction in chemistry, or to require a candidate failing to satisfy the examiners in any subject, to attend a course of lectures on the subject before he presents himself a second time, or to impose any condition precedent whatever on a candidate tendering himself for examination.

The Lord President is advised that it would *not* be competent for the Board so to require.

The words of the paragraph in question were intended to express that the examinations should be of such a character as to enable the examiners to satisfy themselves of the practical skill, knowledge and qualifications of the candidates, and for these purposes they might require practical tests to be submitted to the candidates.

If it should be your wish to see Sir Lyon Playfair on the subject, I will arrange for a meeting at any time that may suit Sir Lyon's convenience.

I am, Sir, your obedient servant,
C. L. Peel.

Dr. **Symes** said there were no such words in the letters just read as were implied by Mr. Carteighe.

The **President** said he must point out to Dr. Symes that his motion only covered the reading of the letters, and that, therefore, any subsequent remarks would be out of order, but he thought the Council might perhaps like to hear what Dr. Symes had to say.

Dr. **Symes** said, all he wished to say was that the letters did not contain the words mentioned by Mr. Carteighe, and that the implication that Mr. Glyn-Jones and he were not quoting correctly was not in accordance with fact. It had since occurred to him that Mr. Carteighe had in mind the words of the proposed new Pharmacy Bill.

Mr. **Carteighe** said it seemed that he was the culprit, and he was very sorry to have caused Dr. Symes any trouble in the matter. He would just like to say, however, that those letters did not represent the whole case. At that time he was in personal communication with the Privy Council in regard to the matter, and the whole subject was thoroughly considered, the conclusions arrived at being that the Council of the Society had no power to do anything more than to make reasonable regulations. If Dr. Symes could now bring the Privy Council to a different conclusion, no one would be more glad than he at the result.

Mr. Young said they had been told that the Bye-Laws must be taken *en bloc*. Was that so?

Mr. Carteighe: We have had rulings on both sides.

Mr. Glyn-Jones said he understood that the Bye-Laws must be read one by one, and when any particular Bye-Law was objected to it must go back through the whole procedure of the three Council meetings.

Mr. Wootton said that two or three years ago it was ruled that the Bye-Laws must be taken *en bloc*. He was the victim.

Mr. Hills said it must not be forgotten that the Council agreed at the last meeting that it was inexpedient to consider the division of the Minor without a compulsory curriculum. It was true that it was only agreed to by a majority of one; still, it was the decision of the Council. In moving his amendment to Dr. Symes' motion last month, he said nothing about the Privy Council, but moved it simply on general principles.

Correspondence.

The Secretary read a letter which had been received from the Hon. Secretary of the Bradford and District Chemists' Association, enclosing a copy of a resolution passed at a meeting of the Association held on April 8, 1902, which read as follows:—

> That the Journal being the only tangible return for the subscription of country members of the Society, this meeting is of opinion that a liberal expenditure upon it is appropriate; inasmuch as the production of the Journal is an important part of the Society's work, for the efficient conduct of which the Council in its representative capacity, and the Editor, in his departmental capacity, are severally responsible; and it strongly deprecates any curtailment of the Journal which might, in any way, tend to impair its usefulness.

This communication having been referred to the Library Committee, the Council resolved itself into Committee, and the public business terminated.

SIXTY-FIRST ANNUAL REPORT OF THE COUNCIL.

EXAMINATIONS. The number of candidates presenting themselves for the Minor Examination during the year 1901 was 1,479—411 less than in 1900—and of that number 497 passed. The percentage of rejections was 66·39, as against 71 in the previous year. For the Major Examination 104 candidates were examined and 67 failed; both the number of candidates and the percentage of failures showing a slight increase upon the corresponding figures for the preceding twelve months. Seventy persons were registered as "Apprentices or Students" upon production of certificates in Preliminary Knowledge granted by approved examining bodies. Reporting upon the Qualifying Examination, Dr. Stevenson, the Government Visitor to the London Board, directs special attention to the circumstance that 67·9 per cent. of the unsuccessful candidates owed their rejection to incompetence in the practical portion of the examination and that the safety of the public imperatively calls for competent skill and knowledge in practical pharmacy and practical chemistry. He further expresses the opinion that "until Pharmacists themselves agree to require compulsory courses of instruction in at least Pharmacy and Chemistry there will continue to be a large percentage of failures." The Privy Council has requested the Council of the Society to particularly consider this portion of the remarks of Dr. Stevenson.

EVENING MEETINGS. In London, contributions to the scientific meetings of the Society have been made during the Session by Professors Norman Collie and H. G. Greenish, Dr. Augustine Henry, Messrs. T. E. Wallis, W. H. Lenton (*E. Northway Butt Scholar*), F. A. Upsher Smith, W. Garsed (*Salters' Research Fellow*), P. W. Squire, and E. M. Holmes. In Edinburgh the Session opened with an address by Dr. Leonard Dobbin, and subsequent papers were contributed by Dr. J. Gordon Sharp, Messrs. G. F. Merson, D. B. Dott, W. S. Glass, J. R. Hill, T. Dunlop, T. S. Barrie, and J. F. Tocher. The papers and the discussions to which they gave rise are published in the *Pharmaceutical Journal.*

LIBRARY AND MUSEUM. The supervision of the arrangements for the preservation and classification of the books and specimens in the Libraries and Museums has occupied the attention of the Library, Museum, School and House Committee, and the Council is able to report a steady development in this department of the educational work of the Society. Considerable progress has been made in the direction of simplifying the arrangement of books in the Library, as well as improving the method of displaying some of the more illustrative materia medica exhibits in the Museum. The Council desires to acknowledge a number of donations of books and specimens during the year, from Members and others interested in Pharmaceutics or the allied sciences.

THE SCHOOL. The Sixtieth Session of the School of Pharmacy was opened in October by an address by Dr. A. P. Luff, Senior Physician of St. Mary's Hospital—a former Student and Prizeman of the School. The number of entries this Session for the full course of training as well as the painstaking and thorough character of the work of the teaching staff should afford gratification to the Members of the Society.

RESEARCH. Investigations have been proceeding throughout the year under the direction of the Professor of Chemistry and the Professor of Pharmaceutics. Much of the work has been undertaken at the request and for the information of the Pharmacopœia Committee of the General Medical Council. Mr. Upsher Smith (*Demonstrator in the Research Laboratory*), Mr. W. Garsed (*the Salters' Research Fellow*), and Mr. W. H. Lenton (*E. Northway Butt Scholar*) have all been engaged in this work and the results have been embodied in valuable papers read at the Evening Meetings of the Society or otherwise published.

BENEVOLENT FUND AND ORPHAN FUND. Six additional annuitants were elected in December last, so that at the end of the year forty-two persons were receiving a regular income from the Fund. The total expenditure for the year amounted to £2,870, of which no less a sum than £965 was given in casual grants. Subscriptions to the Fund have been fairly well maintained, but they do not keep pace with the growth in the number of deserving applicants for assistance.

The Orphan Fund continues to maintain in the London Orphan Asylum the son of a former Member and subscriber to the Benevolent Fund. Several other suitable cases for the benefit of this useful Fund have been brought to the notice of the Council, but as in each instance the essential conditions laid down by the Will of the Founder—Thomas Hyde Hills—had not been complied with, no help could be given.

LEGAL. The number of alleged cases of infringement reported to the Registrar during the year was 409, showing a large increase as compared with the previous year, when the number was 236. Each case was carefully investigated, and in nearly 200 instances the Registrar was authorised to proceed for the recovery of penalties.

The cases in which proceedings were instituted for offences under Section 15 of the Pharmacy Act, 1868, do not call for comment, but attention may be directed to one case under

REVENUE ACCOUNT, 1901.

EXPENDITURE.	England and Wales. £ s. d.	Scotland. £ s. d.	£ s. d.
To Annuities			500 0 0
Carriage of Books and Parcels			12 17 11
Certificates of Death			24 12 1
Examinations:—			
Minor and Major:—			
Fees to Examiners and Travelling Expenses	1631 12 8	642 8 10	
Refreshments	70 3 9	50 0 8	
Apparatus, Drugs, Chemicals, Printing, and sundry charges	404 16 2	106 6 6	
	2106 12 7	798 16 0	
		2106 12 7	
England and Wales			2905 8 7
Gas, Water, Coal, Cleaning Materials, etc.			390 7 5
House Servants—Wages			304 7 10
Journal: Balance of account			2285 1 3
Law Costs			1452 9 3
Library:—Librarian's Salary		283 6 8	
Purchase and Binding of Books		110 5 8	
Library Association Meeting		10 10 0	
Catalogue		175 11 9	
			579 14 1
Museum:—			
Curator's Salary		400 0 0	
Assistant's Wages and Sundry Expenses for Bottles, etc.		174 16 6	
Museums Association Meeting		10 10 0	
			585 6 6
North British Branch:—			
Assistant Secretary—Salary		250 0 0	
Taxes and Insurance		66 15 8	
Members of Executive—Travelling Expenses, etc.		68 5 6	
Fuel, Light, Water, Cleaning, Service, and Miscellaneous Expenses		357 19 1	
			743 0 3
Evening and other Meetings			43 16 11
Postage:—General		229 6 5	
Journal		863 4 8	
			1092 11 1
Register—Balance of Account			13 11 0
Rent, Taxes, and Insurance			766 16 10
Premium on Leasehold Redemption Policies			128 2 6
Repairs and Alterations			937 9 5
Electric Service and Fittings			92 1 11
Salaries: Secretary and Registrar, and Clerks			1582 14 0
School of Pharmacy:—			
Stipends of Professors and Share of Fees		1274 15 3	
Lecturer, Assistant Lecturer, and Demonstrators, and Wages of Porters		573 18 8	
Apparatus, Chemicals, Specimens for Lecture Classes, Prize Medals, Certificates, and printing and posting prospectuses		329 5 2	
			2177 19 1
Stationery, Engraving, Printing and Office Expenses			355 14 10
Calendar:—Balance of Account			110 15 4
Sundries			14 7 7
Travelling Expenses—Council and Committees			404 18 1
Refreshments for Council			41 0 0
Pharmacopœia Research Committee			192 8 11
Local Organisation Expenses:—Meetings, etc.			108 2 11
			£17,845 15 7

INCOME.	£ s. d.	£ s. d.
By Examination Fees:—		
1518 Minor	7704 6 0	
106 Major	288 16 0	
	7,993 2 0	
69 Registration Fees as Apprentices or Students	144 18 0	
Restoration Fees	12 12 0	
		8150 12 0
Interest on Investments:—		
Ground Rents	146 18 3	
Rent of 15, Bloomsbury Square	182 18 9	
		329 17 0
School Fees		1125 12 0
Subscriptions:—		
5451 Members	5723 11 0	
742 Student-Associates	389 11 0	
Life Subscriptions	472 10 0	
		6585 12 0
		16191 13 0
Balance deducted from Accumulated Funds		1654 2 7
		£17,845 15 7

BALANCE SHEET, DECEMBER 31, 1901.

LIABILITIES.	£ s. d.	£ s. d.
Sundry Creditors		1580 2 11
Examination Fees in Advance		2068 12 0
School Fees in Advance		824 4 0
Accumulated Fund as on December 31, 1900	37226 15 10	
Deduct Balance of Revenue Account as above	1654 2 7	
		35572 13 3
		£40,045 12 2

ASSETS.	£ s. d.	£ s. d.
By Freehold Ground Rents at Paddington Green, at cost	5551 5 6	
Freehold House in Edinburgh ,,	1931 10 0	
,, ,, Additional Building ,,	3111 4 9	
*Leasehold Premises:—		
Galen Place ,,	10606 10 2	
15 and 16, Bloomsbury Square ,,	9527 5 3	
17, Bloomsbury Square and 72 and 73, Great Russell Street, valued at	5000 0 0	
		35727 15 8
Sundry Debtors		2694 17 1
Cash:—		
In Treasurer's hands	102 7 1	
London and Westminster Bank	1468 8 9	
Chairman of Executive in Scotland	52 3 7	
		1622 19 5
		£40,045 12 2

The above assets are exclusive of a Museum and a Library, as well as Furniture and Fittings, in London and Edinburgh. The copyright of the Pharmaceutical Journal *is also not included.*

* Note.—*The leases of these properties are insured under a Capital Redemption Fund for £25,000.*

BENEVOLENT FUND.

REVENUE ACCOUNT, 1901.

EXPENDITURE.	£	s.	d.
To Annuities	1875	0	0
Grants	965	0	0
Interest on Loan:—			
From the Orphan Fund	35	0	0
From London and Westminster Bank	173	11	9
Stationery, Printing, and Postage	55	12	2
Law and Professional Charges	114	1	8
	£3218	**5**	**7**

INCOME.	£	s.	d.
By Subscriptions	1623	19	0
Ground Rents	1149	4	7
Dividends	151	5	7
Donations	117	15	0
Rent of "The Elms," Strawberry Hill	126	17	7
	3169	1	9
Balance deducted from Accumulated Funds	49	3	10
	£3218	**5**	**7**

BALANCE SHEET, DECEMBER 31, 1901.

LIABILITIES.	£	s.	d.	£	s.	d.
To Loan:—						
Orphan Fund				1000	0	0
London and Westminster Bank				9000	0	0
				10000	0	0
Accumulated Funds as per Balance Sheet, December 31, 1900	34631	18	9			
Deduct Balance of Revenue Account	49	3	10			
				34582	14	11
				£44,582	**14**	**11**

ASSETS.		£	s.	d.	£	s.	d.
By Freehold Ground Rents at:—							
Battersea	at cost	12213	0	0			
Broomwood Park	"	7454	7	10			
West Kensington	"	5809	2	1			
Shortlands, Kent	"	8906	11	6			
					34383	1	5
Freehold House at Strawberry Hill	"				2323	8	0
Freehold Land at Shortlands	"				787	14	6
£5000 2¾ per cent. Consols (cost)					5470	3	4
St. Paul, Minneapolis, and Manitoba Railway 4 per Cent. Bond					100	0	0
Camwal, Ltd:—Ordinary fully-paid up £1 Shares					200	0	0
Preference do.					50	0	0
Sundry Debtors					508	8	5
Annuities paid in Advance					508	15	0
Cash:—							
London and Westminster Bank—Current Account		127	14	1			
Do. Donation Account		117	15	0			
Treasurer Current Account		5	15	2			
					251	4	3
					£44,582	**14**	**11**

SCHOLARSHIPS AND PRIZE FUNDS ACCOUNT, 1901.

	Balance of Income January 1, 1901.			Income 1901.			Expenditure. 1901.			Balance December 31, 1901.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Bell Memorial Scholarships	24	16	10	56	7	4	70	4	3	10	19	11
Pereira and Hills Prize Funds	15	10	4	14	14	9	13	14	9	16	10	4
The Burroughs Scholarship	46	16	3	27	2	6	0	5	6	73	13	3
Manchester Pharmaceutical Association Scholarship	51	9	10	24	13	2	0	5	6	75	17	6
Redwood Memorial Scholarship	135	11	0	20	15	5	0	5	6	156	0	11
Hanbury Memorial Fund	22	13	8	11	0	0	22	5	6	11	8	2
E. Northway Butt Scholarship	—			50	0	0	50	0	0	—		

ORPHAN FUND.

(Founded by Thomas Hyde Hills, 1891.)

	£	s.	d.
To London Orphan Asylum for Edwin Bennett	30	0	0
Balance, December 31st, 1901:—London and Westminster Bank	318	15	9
	£348	**15**	**9**

	£	s.	d
By Balance, Jan. 1st, 1901:—London and Westminster Bank	297	0	3
Subscriptions	7	0	6
Interest on Invested Capital	9	15	0
Interest on £1000 lent to the Benevolent Fund	35	0	0
	£348	**15**	**9**

The Capital Account of this Fund consists of:—

	£	s.	d.
Two and three-quarters per cent. Consols	**355**	**0**	**0**
Amount lent to the Benevolent Fund	**1000**	**0**	**0**

WATERALL LEGACY.

	£	s.	d.
To Annuity	24	0	0
Law Costs and Printing	3	3	0
Balance, December 31, 1901:—London and Westminster Bank	13	7	6
	£40	**10**	**6**

	£	s.	d.
By Balance, January 1, 1901:—London and Westminster Bank	13	10	2
Dividend on £982 14s. 10d. Consols	27	0	4
	£40	**10**	**6**

AUDITORS' REPORT.

We, the undersigned Auditors, have examined the foregoing accounts of the Pharmaceutical Society of Great Britain, and find them correct. We have inspected the Deeds relating to the House Property and Ground Rents, and also find that there were standing to the account of the Society at the Bank of England, and in the hands of the Society's Bankers, on December 31, 1901, the several securities named in the Balance Sheet of the respective accounts.

In addition to the above, the following Securities were standing to the credit of the Society on December 31, 1901:—

Waterall Legacy	Two and three-quarters per cent. Consols				**982**	**14**	**10**
Pereira Memorial Fund					**100**	**0**	**0**
Bell Memorial Fund					**2050**	**0**	**0**
Hanbury Memorial Fund					**400**	**0**	**0**
Redwood Memorial Fund	Great Indian Peninsula Railway Annuity, Class B				**26**	**14**	**3**
Hills Prize Fund	Russian Bonds				**316**	**8**	**0**
Manchester Pharmaceutical Association Scholarship Fund	Manchester Ship Canal Co. 4 per cent. Debentures	£700	0	0			
	Two and three-quarters per cent. Consols	52	4	6			
					752	**4**	**6**
John Cripps Legacy Account	India 3½ per cent. Stock				**1702**	**10**	**0**
The Burroughs Scholarship	4 per cent. New Zealand Consolidated Stock				**720**	**0**	**0**

E. NORTHWAY BUTT
CHARLES HODGKINSON,
F. HARWOOD LESCHER
CHARLES UMNEY
Auditors.

February 27, 1902.

Section 17, in which proceedings were instituted and a conviction obtained in the police court at Newcastle-under-Lyme against a firm of florists, who had sold an insecticide containing nicotine in a bottle labelled "Brandy," which had caused the death of a man who had drunk a small portion of the liquid in mistake for beer. Defendants obtained permission to appeal to the High Court, but, with the consent of the magistrates, the appeal has since been abandoned.

By an appeal case in the High Court of Justiciary it has been decided that the Sheriffs in Scotland have power to inflict imprisonment in default of non-payment of penalties for offences under the Pharmacy Acts.

It has also been definitely settled by another appeal in the same Court that the Society's Registrar is entitled to prosecute in Scotland under Section 17 of the Act.

The attention of the Council has been directed to the habitual employment of unqualified persons as assistants in open shops by medical practitioners, thereby causing such persons to commit breaches of the Pharmacy Act, 1868. The Council, considering that such action was a source of danger to the public, lodged a complaint with the General Medical Council, with the result that several medical practitioners were called before that body in November last to give an account of their conduct in this respect, and severally expressed their regret.

The General Medical Council has since issued a notice to the effect that in the opinion of the Council such practices are professionally discreditable and fraught with danger to the public, and has notified to the profession that any registered medical practitioner who is proved to have so offended is liable to be regarded as guilty of infamous conduct in a professional respect, and to have his name erased from the Medical Register.

BYE-LAWS. The proposed new Bye-Laws referred to in the last Report have been reconsidered with especial reference to the provisions dealing with cases of candidates absent from examination on account of illness. A modification in Bye-Law 23, Sect. X., has, consequently, been proposed by the Council, providing for the payment of the nominal re-entry fee of One Shilling by candidates whose absence has been excused by the Council or either of the Boards of Examiners. The new Bye-Laws, as amended, were read a first time at the meeting of the Council in April, and will be submitted to a Special Meeting of the Members of the Society on May 28 for confirmation. With the exception of the modification above indicated the proposed Bye-Laws are identical with those confirmed by the Society in August, 1900.

PARLIAMENTARY. The draft Pharmacy Bill adopted by the Council in March, 1901, has been the subject of correspondence with the Privy Council Office and the Colonial Office, and the President has, in connection therewith, had interviews with the chief permanent officials of those Departments. In view, however, of the appointment by the Privy Council of a small Committee for the purpose of considering the changes that might be desirable in Schedule A to the Pharmacy Act, 1868, and having regard to the expression of opinion by the Clerk of the Council that "when the Report of the Committee is received it will then be a convenient time to consider what amendments of the law may be expedient to give effect to the wishes of the Society," the Council resolved not to proceed further with the draft at present.

The Departmental Committee of inquiry on the Sale of Poisons—of which Mr. Martindale was up to the time of his death a member, and of which Mr. Walter Hills is now a member—commenced his sittings in November. Evidence on behalf of the Society has been submitted to the Committee by the President, Vice-President, Messrs. Carteighe, Cross, and J. W. Sutherland, whilst the Registrar and the Assistant-Secretary in Scotland appeared as witnesses in response to the expressed desire of some of the members of the Committee to have information concerning points of procedure in connection with the administration of the Pharmacy Acts.

POISONS REGULATIONS. Consequent upon representations by Coroners and others, the Local Government Board, suggested to the Council that it appeared desirable that the Regulations adopted pursuant to Section I. of the Pharmacy Act, 1868, should be amended to include liquid disinfectants. The Council, after consideration, adopted at the April meeting a resolution proposing the alteration of the Poison Regulations by including within the scope of Clause 3 of the Regulations liquid disinfectants containing poison. This alteration will be proposed and submitted to the members at a special meeting on May 28.

DISPENSERS' COMMITTEE. The desirability of ascertaining as far as practicable the conditions under which dispensing is performed in public institutions in Great Britain, induced the Council to appoint a Committee to collect information on that point. That Committee, with the valuable assistance of the Divisional Officers of the Society, was enabled to obtain particulars in regard to 716 institutions, and the data so procured were, after classification and tabulation, embodied in an instructive report, which was published in the Journal of March 8, 1902. The Committee has not yet completed its investigation.

NORTH BRITISH BRANCH. The report of the Executive of the North British Branch was presented to the Council at its last meeting, and a comprehensive *résumé* is published in the Journal for May 10, 1902 (see p. 384). In connection with the work of the Society in Scotland during the past year, reference must be made to the admirable educational scheme formulated by Mr. J. F. Tocher, and sent to the Council in April by the Executive. The object of the scheme is to secure a course of training for pharmaceutical students in the Scottish Universities, and the Council cordially approved the principle of the scheme.

HONORARY AND CORRESPONDING MEMBERS. The following Corresponding Members were elected Honorary Members at the last meeting of the Council:—Sir D. Brandis, Sir George King, Sir Thomas Hanbury, Wm. Saunders, and Professor Julius Wiesner. M. Léon Guignard, of the School of Pharmacy, Paris; Dr. Donald Macalister *(Chairman of the Pharmacopœia Committee of the General Medical Council)*; Dr. Sorby, of Sheffield University; and Professor Ralph Stockman, M.D., F.R.S.E., of Glasgow University, were also elected Honorary Members. As Corresponding Members, W. G. Freeman, F. Jadin, Dr. Thoms, and Dr. Prain were elected.

OBITUARY. The following Honorary Members and Corresponding members have died during the year:—Dr. Cornu, Dr. Stevenson Macadam, Professors Bretschneider, Herrera, Van Eeden, and Hamberg, and Mr. G. H. Hawtayne. The following deaths have also to be recorded:—William Martindale, Past-President of the Society; J. T. Davenport, also a Past-President of the Society and for many years a Member of the Board of Examiners for England and Wales; W. B. Randall, a former Member of Council; J. Bowerbank (a founder); E. M. Burden; T. M. Deighton, Wm. Readman (founder), J. Rodman, J. Wild, and J. Stevenson, Divisional Officers.

LETTERS TO THE EDITOR.

Pharmacopedy.

It is true that the phrase "materia medica" applies to both subject-matter and subject, but so, in a wide sense, do many other similar terms. Mr. Humphrey objects to the term as the name of the subject, and says that we do not speak of a professor of "plants" or a text-book of animals, why, then, a professor or a text-book of "materia medica"? If we spoke of a professor of "drugs" the analogy would be accurate, but if we may say a professor of botany, why not a professor of materia medica? Both terms merely represent the subject-matter—in fact, "botany" is less appropriate as the name of the subject than "materia medica" because it represents but a small portion of the subject-matter, *βοτάνη*, grass, the "*η*" anglicised to a "y." It is true we do not use the word "botany" to represent the subject-matter as often as we do "materia medica," but this does not make "botany" more appropriate as the name of the subject; nor because "botany" is Greek for a portion of the subject-matter, as "materia medica" is Latin for the whole of the subject-matter, do we prefer phytology or phytopedy. The diphthong "*αι*" of Greek roots is generally transposed "æ" in scientific English words without Latinisation: *αἷμα* gives hæmorrhage and hæmoglobin; *παιάν* becomes pæan, but the point is small and unimportant. The pronunciation of the words pharmacology, pharmacography, and pharmacognosy is not strictly comparable with that of pharmacopedy, for the reason that the vowels of the penultimate syllables of the three former are properly short in pronunciation, whereas the vowel (or diphthong) of the penultimate syllable of pharmacopedy, arising from *παιδεία*, is properly long.

London, May 5, 1902. F. W. Gamble.

The Chemistry of Cannabis Indica.

For the sake of completeness, I may be permitted to add to my notes published last week, by pointing out that Hooper (*Pharm. Journ.* [3], **25**, 246) described the chief constituent of an extract prepared by exhausting "ganja" successively with ether and alcohol as a neutral resin, which contained the active principle of the drug. The resin was of a brown colour and tough consistence, soluble in petroleum ether, benzene, ether, carbon bisulphide, ethylic alcohol, or amylic alcohol, but it was insoluble in alkalies and left no ash on ignition. The extract also contained oil, fat, wax, chlorophyll, a substance which gave a purplish-black colour with ferric chloride, and about 0·5 per cent. of a physiologically inactive resin acid. Further, an alkaloid, with which ammonia was often associated, was found in nearly all the fresh samples of "ganja" examined, but the alkaloid occurred only in traces in older specimens, and was altogether absent in the case of extracts which had been kept for some years. The alkaloid and ammonia were stated to be combined in the plant juices with organic acids, one of which had the properties of citric acid. Sugar occurred in some varieties of "ganja"; potassium nitrate was also detected in an extract of the drug, thus confirming the observation of T. and H. Smith (*Pharm. Journ.* [3], **4**, 831), and manganese was found in the ash. It is also interesting to note that the substance to which Leib Lapin ('Ein Beitrage zur Kenntniss der Cannabis Indica.' Diss. Jurjew. 1894) gave the name cannabindon had the same formula—$C_8H_{12}O$—as the cannabindon of Kobert (see *P.J.*, *ante*, p. 364), but it was described by Lapin as a dark cherry red mass of thick consistency, which took the form of the vessel in which it stood.

May 7, 1902. John Humphrey.

Uniformity in Dispensing.

How desirable, and yet how difficult of attainment! Such will be the exclamation of almost every dispenser whose attention is drawn to this matter; but the disconnected notes on the subject by Mr. Glass, though well intended, are suggestive only of hazy ideas expressed in an ambiguous manner and are not likely to bring a solution of the difficulty any nearer. Some of the methods he suggests—*i.e.*, adding "powdered flies (*sic*) or liquor epispasticus" to emp. cantharidis when it is dispensed to the prescription of a medical practitioner—can only be described as reprehensible and retrograde. He is advocating uniformity, and yet when he gets a prescription for emp. cantharidis he deliberately supplies emp. cantharidis plus an uncertain amount of "powdered flies or liquor epispasticus" instead of the B.P. preparation as the prescriber directs. No dispenser is entitled to do such a thing without the expressed sanction of the prescriber, and, as a step towards uniformity, it is akin to subsidising public-houses in order to encourage temperance. Marked distinction must be drawn between the addition of "powdered flies," etc., to emp. cantharidis and adding powdered tragacanth to a mixture of, say, bismuth carbonate, magnesium carbonate, and powdered rhubarb. In the former case the dispenser would be supplying something stronger than the prescriber ordered. In the latter case the mixture would not only be of the proper strength, but by the addition of an inert substance—to wit, tragacanth—the dispenser would insure a greater chance of the patient always getting the precise dose desired by the physician. The suggestion that the first dispenser should indicate on the prescription the method he adopted, and that others should follow it, is unworkable for several reasons:—(1) The patient might interpret the words as an unauthorised addition to the physician's prescription; (2) the physician might resent them, as indicating to the patient that he could not prescribe properly; (3) the first dispenser, even though an ignoramus in pharmacy, who did not know compatible from incompatible, would assume a right to lay down the law as to how a prescription should be dispensed, and unless the first dispenser's methods were adhered to by subsequent dispensers no advantage would follow the adoption of the working arrangement; (4) a first dispenser, by giving the patient something other than the physician ordered, would, if the arrangement were to be loyally followed, compel others to be equally unfaithful to the trust reposed in them by physician as well as patient. The first two obstacles might be got over by adopting a code of signs unintelligible to the public, and occupying small space, but readily understood by dispensers. The other two obstacles would not be so easily overcome. Some of the paragraphs in the paper referred to are of such an extraordinary nature that one may well hesitate about taking them seriously. The statement in paragraph 2 as to mixtures containing an excess of salts—viz., that it should be dissolved by the aid of heat, the solution strained, cooled, and set aside until the excess crystallises out, and the crystals then reduced to powder—looks fine on paper, but in practice it will not work out so well, for in the case of some salts several hours would elapse ere the entire excess crystallised out, and to keep a patient waiting for the medicine for such a period of time would not be justifiable in cases of severe illness, not to mention the additional difficulty of persuading the physician and the patient that such waiting was unavoidable. On the other hand, were the mixture sent out before the excess had crystallised out, the appearance of an after crop of crystals might raise questions difficult to answer satisfactorily. In view of what is recommended anent emp. cantharidis, this suggestion is pretty much "straining at a gnat and swallowing a camel." In paragraph 6 two methods of mixing the quinine sulphate, powdered rhubarb, and phenacetin powder are mentioned, and, if uniformity is to be secured, the first dispenser ought to indicate on the prescription the method he followed, so that others who might get the same prescription might thus be enabled to follow exactly in his footsteps. These powders might differ slightly in shade when dispensed at different times; such difference would not be due to the use of different mixing implements, but to the amount of pressure put upon the ingredients during the mixing, and that might happen not only with two different dispensers, but with the same dispenser. The therapeutic action of the powders would be the same in both cases, and the difference in shade, supposing the ingredients were in both cases carefully mixed, would be too small to be noticed by the patient, or to justify the implied suggestion that the first dispenser should mark on the prescription "mixed in an enamelled mortar by the aid of a pestle," or "mixed on a piece of paper by means of a knife." The remarks in paragraph 9 do not appear to have any necessary or obvious connection with uniformity in dispensing, and, if intended as information, have a Rip Van Winkle air. If they are meant to refer to the suggestion that the first dispenser should indicate on the prescription his method of mixing, there would be livelier times in store for the pharmacist. Just fancy a first dispenser scribbling on to every ointment prescription that unfortunately came in his way, "This ointment was mixed on a slab," or "This ointment was mixed in a mortar," as the case may be; "it was manipulated and transferred to the pot by the aid of a bone, ivory, or steel knife," as the case may be, to which might be added, parenthetically, any observations on the said bone, ivory, or steel knife. When dispensing becomes a "screaming farce" instead of a responsible function it is obvious Mr. Glass will be its chosen leader. In his concluding paragraph he tells us that in preparing pills and powders provision is not made for loss. Since he is so anxious to accurately fulfil the orders of prescribers, he might begin by giving them emp. cantharidis when they order it, and not emp. cantharidis plus "powdered flies." By all means let us endeavour to secure uniformity, but let the pharmacist do so "with due respect to his status" as an intelligent and skilled compounder of medicines; also with some respect for the intellectual traditions of the evening meetings of the Pharmaceutical Society.

Edinburgh, May 2, 1902. W. Lyon.

Martindale Memorial Fund.

Kindly insert enclosed list of subscriptions to Martindale Fund in this week's Journal, they having being omitted from the list published last week.

London, May 6, 1902. M. Carteighe.

Subscriptions Sent Direct to the Treasurer.

	£	s.	d.
W. Warren	£2	2	0
Jas. Hinds, Coventry......	1	1	0
G. Arthur Lansdown	£1	1	0
G. C. Druce, Oxford.......	1	1	0

Division of the Qualifying Examination.

Your correspondent, "No Division," in last week's Journal gives, what appear to me, somewhat extraordinary reasons why he does not approve of dividing the qualifying examination. He says it would let the weaklings pass and would cheapen labour. Now, in my opinion it would ensure that the men who would then go up for the final portion of their examination would be better trained and possess more well-digested knowledge. The failures would be considerably less, but the ultimate result as to numbers passing would be much the same, and those who did so would be more competent; they would deserve and receive better pay. That a favourable opinion is held by a great majority of our craft, and especially by those most capable of judging, may be gathered from the fact that when Dr. Symes' motion for the division was before the Council eight members voted for it, and of the nine who voted against it only Mr. Park showed his disapproval, the other eight approving, but wishing it deferred until a compulsory curriculum could be enforced. Then the three aspirants to seats on the Council all approve of division, Mr. Campkin emphasising it most strongly. Hence we have the opinion of twenty representative men—nineteen for, one against.

May 5, 1902. "Division" (133/19).

Manufacturers of Cresol.

Can any reader give the name and address of any manufacturers of cresol, in various degrees of purity, from crude to 96 per cent.? If so the writer will be much obliged by being put into communication with same.

May 5, 1902. "A. F. C." (73/21).

Acetylene Lamp.

Can any reader of the Journal favour me with the name of the makers of an acetylene lamp suitable for shop use?

May 5, 1902. "Lamps" (73/23).

The Turpentine Test for Glacial Acetic Acid.

During the discussion on Mr. Dunlop's paper on "The Turpentine Test for Glacial Acetic Acid" (*ante*, p. 347) three speakers stated they had found no difficulty in producing a clear solution, presumably with equal volumes of the two liquids. Mr. Hill suggested that we might have formed our judgment from a merely momentary observation of the test, and that, if we had waited, we might have found the two liquids separating. In my experiments this is not the case. A mixture of equal volumes of glacial acetic acid and commercial oil of turpentine has remained unchanged for five days. A similar mixture, with the Russian oil mentioned in my remarks, shows no sign of separation after twenty-four hours, and the same result is observed with Howards' rectified oil. I should add that the nights have been cold, and the thermometer this morning stood at 10° C., rising during the day to 15° C. Obviously there is need for further experiments.

Edinburgh, April 29, 1902. F. McDiarmid.

I am obliged to Mr. Squire for his amplification (*ante*, p. 368) of the paragraph (in the 'Companion') on "Solubility," although, without his authority, I would not have felt justified in applying to a paragraph a statement that is specifically attached to a sentence. In this connection I would like to ask if the time limit ("three days") also applies equally to the whole paragraph? If so, it has been demonstrated that B.P. glacial acetic acid mixed with an equal volume of oil of turpentine will not stand the test of solubility.

Glasgow, May 5, 1902. Thomas Dunlop.

The reported statement to which Mr. Lyon takes exception, being telegraphic, is necessarily condensed. What was really said is made clear by the following transcript of the shorthand writer's note:—

"Mr. Hill said, whether or not we agree with what Mr. Dunlop says, there seems to be pretty general agreement with his recommendation that this test should not be introduced into the Pharmacopœia, whatever may be said on the merits of the question. I think he perhaps indicates a possible source of error into which some experimenters may have fallen. It is very striking that two chemists should have no trouble at all in obtaining a perfectly clear solution. This is a subject which has been frequently brought under my notice by Mr. Duncan and several others who have found a difficulty. Mr. Dunlop mentions a case in which when he first tried the test it was a failure. Later on he tried it again and succeeded, but immediately there was a separation, and he could not get it to work again. I have several times noticed in applying the test that when I mixed the two there was a perfect solution, but in a moment or two they began to separate. I think Mr. Duncan can confirm what I say. Possibly they have got a solution, but have not waited long enough to find whether there was separation. Mr. Lyon asked what was the length of time. Mr. Hill said: I cannot define the time exactly, but it is a very short time when separation takes place, and you cannot get them to mix again. The idea of the Pharmacopœia, I take it, is that you get a clear, permanent solution in equal volumes. I do not say you do not, but that is my experience."

It will be seen that the Journal report is accurate, and contains neither addition nor after-thought. Mr. Lyon's experiment, notwithstanding the two hours' heating in the window, confirms and illustrates Mr. Dunlop's experience and my assertion that solution is sometimes followed by separation.

Edinburgh, May 3, 1902. J. Rutherford Hill.

Citrine Ointment.

In reply to Mr. Squire, I may say that I noticed the two points to which he refers, and I purposely ignored them, the object of my letter being to emphasise the opinion that the mere keeping properties of citrine ointment were not a guarantee of its quality, therapeutically; they simply prove that the ointment is acid to begin with. Mr. Squire thinks my figures giving the percentage of "free acid" really mean total acid; perhaps he is right, none of us is infallible. In that case, however, let me ask him to explain how a sample of citrine ointment showed 2·1 per cent of acid, bearing in mind the theory, which he adopts, that all the mercury exists as nitrate. If all the mercury exists as nitrate, and all the acid therein be titratable, clearly this sample ought to have shown at least 3·7 per cent. of acid. But it did not, therefore the theory on which Mr. Squire bases all his calculations at once collapses. I also observed the second point mentioned by Mr. Squire, but as I regard it as inconceivable that a carefully made B.P. ointment could by any possibility contain more acid than one made by Squire's process, I preferred to make no comment on the figures. Should there be any dissatisfaction with the official process (and I have heard of none), it is clearly a case for the editorial committee of the B.P., the medical members to say what degree of acidity they desire, total acidity if Mr. Squire will have it so, and the pharmaceutical members to adjust the process accordingly.

Glasgow, May 3, 1902. Thos. Maben.

REPLIES TO CORRESPONDENTS.

Borax in Hairwash (J. H.—73/18).—It is not probable that borax has any such effect.

Shaving Paste (R. B.—133/25).—Further information on the subject may be expected shortly.

Vaseline (H. W.—73/14).—There is nothing to prevent you applying the proper name to the preparation, in whatever form you may choose to put it up.

Matriculation Examination (H. R.—73/16).—The London University Matriculation Examination is undoubtedly the most suitable one for your purpose.

Paints and Colours (A. J. A.—73/10).—Hurst's 'Painters' Colours, Oils and Varnishes' (Griffin, 12s. 6d.) deals with the composition, manufacture, etc., of pigments.

Cremala (F. J. K.—133/10).—We note that you are the proprietor of this preparation for the skin, and shall notify any inquirers of that fact if the occasion arises.

Situation in Laboratory (W. J. B.—73/24).—There is no reason why you should not be able to obtain such a situation, but whether your qualifications will suffice will depend upon the requirements in any particular case.

Hair Tonic (J. H. S.—73/15).—It appears to contain soft soap, solution of ammonia, and spirit of rosemary. Try the following:—Soft soap, 60 grains; spirit of rosemary, and solution of ammonia, each 1 fl. oz.; water to 8 fl. oz.

Infants' and Invalids' Foods (J. Y.—73/17).—There is not, so far as we are aware, any work dealing with the composition of such foods. They usually consist of cooked flour or biscuit powder, mixed with sugar of milk, dried malt extract, etc., etc.

Mantles (T. S.—73/6).—The result of inquiries which have been made since the receipt of your communication seems to indicate that the business is not a genuine one. The address advertised is only a place where letters are received, and it is doubtful whether you will be able to obtain any satisfaction in the matter. Shall we return the mantle?

Alcohol as a Preservative (A. J. T.—73/19).—It is impossible to say what is the smallest quantity required for the purpose, as that must obviously depend upon the kind and quantity of organic matter present, and must be determined by experiment. Try the effect of adding from 1 to 5 per cent. to separate portions and compare the results from time to time.

Bleaching (G. S. D.—73/12).—Duerr's 'Bleaching and Calico Printing' (Griffin, 12s. 6d.), or Gardner and Cameron's 'Bleaching, Dyeing, and Calico Printing' (Churchill, 5s.) may supply the information you require, but the publishers (Messrs. C. Griffin and Co., Exeter Street, Strand, London, and Messrs. J. and A. Churchill, 7, Great Marlborough Street, London) will doubtless inform you on that point if you send stamped envelopes for replies.

Hair-Restorer (J. S.—73/20).—(1) There is only one size of the preparation on the market. (2) You can make a similar preparation by mixing intimately calcareous precipitated sulphur, 180 grains, lead acetate, 120 grains, and powdered canella bark, 10 grains, then rubbing up the mixed powders with glycerin, 2 fluid ounces, and gradually adding sufficient water to make 8 fluid ounces. Your difficulty in getting the sulphur to mix has probably been due to the use of pure precipitated sulphur. (3) The preparation is well spoken of. (4) Hair-dyes containing silver salts are understood to be harmless, but it is not usual to employ a solution of silver nitrate alone.

Combined Toning and Fixing Bath (R. R.—73/7).—There does not appear to be any published formula for a combine toning and fixing bath containing calcium chloride, but experiment has proved the following to answer well:—

Calcium chloride (pure)	¼ ounce.
Ammonium sulphocyanide	50 grains.
Sodium hyposulphite	1½ ounces.
Distilled water	to 10 fl. ounces.

Allow to stand for a few days and filter if necessary, then add—

Gold chloride	2 grains.
Distilled water	2 fl. drachms.

This bath gives warm tones and acts slowly, allowing ample trme for fixing.

Special Notice to Correspondents.

All Communications for the 'Pharmaceutical Journal' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and if intended for publication in the current week's issue, should arrive not later than Wednesday morning.

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LONDON: SATURDAY, MAY 10, 1902.

PURPOSES AND MEANS.

As the reckoning is an inevitable sequel to a feast, so the members of the Pharmaceutical Society, having lately enjoyed almost a surfeit of good things, are now called upon to face the account of the income and expenditure for purposes of the Society during the past year. Unfortunately, the account is not, on this occasion, one that can be regarded with as much equanimity as its immediate predecessor, since the cessation of the preliminary examination has naturally been attended with a serious falling off in the Society's public income, whilst the general expenditure shows in some respects an increase upon that for the year 1900. In the absence of official definition of outlay for public and private purposes it is only possible here to point out that, since administration of the Pharmacy Acts was vested in the Society, its expenditure is to be viewed almost entirely in that light. The expenditure on the School is certainly a public matter, since education of pharmacists is the primary purpose of the Society, not only because that is a necessity from every point of view, but also because it is the means of achieving the equally important purpose of protecting the interests of pharmacists in the exercise of their calling.

The accounts for 1901 show that the direct cost of conducting the examinations has undergone considerable diminution, owing to the absence of any charges in connection with the preliminary examination, as well as to the much smaller number of candidates presenting themselves for the qualifying examination during the past year. But the public income from examination fees was, at the same time, more than four thousand pounds short of that received during the previous year, while the cost of conducting the examinations was only twelve hundred pounds less than in 1900. To that part of the Society's administrative work, therefore, must be attributed practically the whole of the deficiency revealed by the financial statements for 1901. Among other items of expenditure relating to the purposes of the Society as a public institution, the amount expended as law costs figures more prominently than has been the case for many years. The maintenance of the Society's School, which also comes into that category, still shows, as has hitherto been usual, a considerable amount on the expenditure side of the account. That is evidence of the slight esteem in which educational requirements and educational facilities are held by the rank and file of a body which has nothing to hope for, or to rely upon, in the future except from those sources. That feature of the year's financial statement has, therefore, a significance far greater than that attaching to it from a mere financial point of view. The question may well be asked whether it points to a maintenance of such credit for the rank and file of chemists and druggists, as has been created for them by the Pharmaceutical Society within the past sixty years?

The income of the Society for 1901 as a private organisation was actually but little in excess of that for 1900, or for previous years since the privilege of membership was extended to all registered persons, the annual subscriptions from members and from student-associates having been less and the balance to the good, provided by increase in the amount received from life subscribers. The result is that, instead of a large cash balance remaining on the general account, as at the end of 1900, it has been necessary to apply the whole of the Society's private surplus and, also, to deduct some sixteen hundred pounds from the Society's accumulated funds, in order to make the account of receipts and disbursements balance. The actual result is that considerably more than three thousand pounds has been contributed, by members of the Society, towards the general administrative and establishment expenses connected with the public work of the Society. That is a position which should not only afford an answer to the question so often asked as to what the Society does for the general body of registered chemists and druggists; it is a position that should also convince a large proportion of the ten thousand unattached, that something is wanting on their part for promoting the interests and the status of the business in which they are engaged.

Among the items of expenditure appertaining more to the work of the Society as a private body, the cost of the Journal—represented by two items on the expenditure side of the account, viz., the excess of outlay over net receipt from advertisers, and the amount paid for postage—is not entirely of that nature, for apart from being a medium for official publication of the Society's transactions which should be of interest to every registered chemist, the Council and the Registrar use the Journal for the purpose of giving notices to the members and to the public, which would otherwise have to be paid for as printing and sent by post. The increased cost of the Journal in 1901 was mainly due to considerable increase in the circulation and size of the Journal to meet a very generally expressed desire for its development; but, notwithstanding the larger expenditure necessary for that purpose, the cost—including postage—has been less than ten shillings a year for each subscriber to the Society's funds.

ANNOTATIONS.

Division of the Qualifying Examination in pharmacy may effect improvement in one or more directions, but it is difficult to see how it can have the result prophesied by the correspondent who signs himself "Division" (see p. 393). In his opinion, division of the examination would make the failures "considerably less, but the ultimate result as to numbers passing would be much the same." But such an ultimate result would savour of the miraculous, and miracles do not happen nowadays. Perhaps "Division" will try again and express his meaning more clearly.

The Death of Mr. John Glover, the inventor of the "Glover Tower," is recorded in the *Times* of May 6 as having occurred last week. Of the importance of the invention known by his name it is unnecessary to say much beyond the fact that its introduction represented an enormous advance in the manufacture of sulphuric acid. Mr. Glover was born at Newcastle in 1817, his father being a working man. Young Glover worked for many years as a plumber, but, having acquired some knowledge of chemistry, he obtained a position at the Felling Chemical Works, where he assisted Mr. H. L. Pattinson in erecting vitriol plant, and in working out the process patented by him. Before that time, however, he had conceived the idea of the Glover tower, and—though the first one was not built till 1859 and the system not adopted in Lancashire till nearly ten years later—such towers are now almost universal in sulphuric acid manufactories. Not only do they effect a large economy directly, by reducing the amount of nitre required for a given quantity of sulphur by about one-third, but indirectly their advantages are even greater, since they enable manufacturers to secure the benefits of the Gay Lussac tower, owing to the ease with which they produce the concentrated acid required for use in the latter device. It has been calculated that the total saving which thus results from the employment of Glover's tower amounts, in this country alone, to over £300,000 a year, as compared with the methods followed before their introduction. Mr. Glover did not patent his invention, and never derived much pecuniary profit from it, but chemical manufacturers know the value of the boon he conferred on them, and the Society of Chemical Industry, at its meeting in London in 1896, testified to the importance of his work by awarding its gold medal for conspicuous service to applied chemistry. He was present on that occasion to receive the medal, and, after being presented with the medal by Mr. Thomas Tyrer, as President, he related how he came to devise the tower, describing also what unexpectedly great results were obtained from the outset by using it in chemical works.

Liniment of Soap continues to be the subject of legal proceedings, and there is to be further litigation, with the object of deciding whether or not a liniment made with methylated spirit may be sold by chemists. At a recent meeting of the Holborn Council, it was reported by the Public Health Committee that a summons against a local tradesman for selling soap liniment made with methylated spirit had, after protracted investigation, been dismissed by Mr. Marsham, one of the magistrates at Bow Street (see *P.J.*, *ante*, p. 280). The magistrate, while he found as a matter of fact that soap liniment was a drug, and that it was official in the British Pharmacopœia, also held that it was largely used and sold as a domestic remedy without being prescribed, that it had been so sold for many years, and that it was an article of commerce. On those grounds he dismissed the summons, but, on application by the Town Clerk, he consented to state a case. On these facts being reported, the Holborn Public Health Committee recommended that the course adopted by the Town Clerk be approved, and that he be authorised to proceed to take the necessary steps with a view to obtaining a decision of the Divisional Court of the King's Bench Division on the subject. The recommendation was adopted, so further developments may be anticipated.

"A Fleet Street Druggist" was rather hardly commented upon by the *Lancet* last week in consequence of his having been misled into a situation that is really a possible, if not a probable, consequence of the patronage that is bestowed upon proprietary nostrums by medical practitioners. The decay of the art of prescribing has long been deplored by eminent authorities, among which may be mentioned the late Sir Richard Quain and, more recently, Dr. Luff; but surely that decay has not yet proceeded so far as to give rise to any necessity for recourse to an American proprietary preparation when occasion arises for ordering chloral hydrate in combination with bromides or other medicinal agents. That, however, is the practice which eventuates in such "poisonous proprietary preparations" as "Bromidia" becoming a source of danger to the public and, often, of great embarrassment to pharmacists, for though the law regulating the sale of such articles, requires that they should be dealt with as poisons, the circumstances of their recommendation and sale, too often tend to conceal the fact that observance of statutory precautions is necessary in supplying them.

The Administration of Marking Ink to patients in mistake for meat juice is hardly a conceivable thing, but, as briefly reported in the Journal a fortnight ago, such a circumstance recently happened at the Bromsgrove, Droitwich, and Redditch Hospital. A special committee was appointed to investigate the circumstances of the case, and it is now acknowledged that marking ink was given in mistake for meat juice to two scarlet fever patients in the hospital at Hill Top, near Bromsgrove. The committee found that a bottle of similar shape to those used for meat juice had been in use for nine months as a receptacle for marking ink, and the members have blamed the matron, who was cognisant of the fact, for her indiscretion in permitting its use for such a purpose, as common sense should have dictated to her the danger she was running. They also consider that one of the nurses exhibited thoughtlessness in stowing the marking ink away with other bottles for medicine and food, and with regard to the nurse, who actually administered the dose under a misapprehension, the committee was of opinion that her suspicions should have been aroused when she saw the peculiar appearance and strong odour of the fluid. After hearing the report of the special committee, the Chairman of the Committee of Management moved that the matron and the nurse who was responsible for storing the medicine and food should be asked to resign, and that proposal was agreed to. It is stated that the nurse who administered the marking ink had already left the hospital. Commenting on the circumstances of this case, the *Medical Press* suggests that the fault lies with the system, or lack of system, which allows marking ink, which is presumably poisonous, to be placed in any but a properly labelled and distinctive bottle. It is also stated that it would be interesting to know what are the ward regulations at the hospital where the mishap took place regarding poison bottles and poison cupboards, while the question is pointedly asked, "Do the dispensers utilise odd bottles and phials for all poisons needed in the wards?"

Spontaneous Combustion may, it is generally understood, occur when certain kinds of oil are used for manufacturing purposes, but the result of experiments conducted by Mr. Carter

Bell for some years past seems to show that certain oils are not so dangerous as they are generally thought to be. In a paper recently read before the Manchester Section of the Society of Chemical Industry Mr. Carter Bell stated that the black oils and recovered oils used in some districts are not so dangerous in that respect as some of the better kinds of olive oil. In the shoddy districts the wool is oiled with various kinds of oil, and in passing through the rag-pulling machine a considerable amount of heat is generated. In experimenting with one of those machines Mr. Carter Bell found that when black oil was used the temperature of the wool when leaving the machine was 104° F., and that when an oil consisting of 75 per cent. of mineral oil and 25 per cent. of recovered oil was used the temperature was the same. But when oils of better quality were used the temperature rose to 134° F., and in the case of olive oil as high as 184° F. The great danger of the low-class oils does not arise from their liability to spontaneous combustion, but from their low flashing points, and also from the fact that when once they are ignited there is great difficulty in extinguishing the flames.

A New Work on Tuberculosis has been published by Professor Behring, who gives in it the results of the investigations into the nature of tubercle poison and of the characteristics of bacilli in human and animal organisms, which were announced by Professor Behring in his speech at Stockholm last year on the occasion of the Nobel award. The investigations extended over a period of six years, and are said to prove that bacilli extracted from tuberculous men and oxen are of the same species, the differences in appearance, growth, and virulence being explained by the adaptiveness of the bacilli to the conditions of life of the organisms they attack. The identity of the species is said to be proved by the fact that the specific poison produced by the tubercle is chemically and physiologically the same whether it be extracted from men or from oxen. Further, it is stated that, by treating oxen with tubercle bacilli of human origin, it is possible to produce complete immunity from infection. It is asserted that the principle of this treatment is being applied with increasing success in all parts of Germany.

Writing About the Medicine Habit, a correspondent of a Glasgow newspaper, described as a chemist, says he knows of many young lads, apprenticed to the drug trade, who have a pronounced weakness for sampling the materials with which they work. Unfortunately, he adds, this inordinate curiosity often embraces drugs of a poisonous nature, and he can recall one or two cases in which alarming symptoms have resulted from the sampling of powerful medicines like nux vomica and belladonna. But the most remarkable instance of this habit he has yet seen came under his notice recently. On entering the shop of a friend, he found a junior apprentice who had been left in sole charge of the business lying unconscious behind the counter. "The odour of chloroform and an empty bottle which lay beside him served to demonstrate that the youth had been whiffing that anæsthetic until he was overpowered, and had then rendered matters worse by emptying all the contents of the bottle. And though his restoration to consciousness was a matter of time and difficulty, the incident is not without value, inasmuch as it has taught one young member of the chemist trade that it is risky and hazardous to tamper with dangerous weapons." If the facts be as recorded in the letter quoted from, further evidence appears to be afforded regarding the undesirability of leaving pharmacies in charge of unqualified persons.

The Extension of Homœopathy was under discussion at a meeting held on April 25 in the hall of the Stationers' Company, London, at which Lord Cawdor presided and was supported by Alderman Truscott, Sir Robert Hunter, Mr. J. P. Stilwell, Mr. J. Howard, M.P., Captain Cundy, and Colonel Clifton Brown. It was resolved that an association be formed, to be called the British Homœopathic Association, for the development and extension of homœopathy in Great Britain, and in particular for the creation and endowment of lectureships, the provision of the means for original research, and the dissemination of a knowledge of homœopathic therapeutics among the medical profession. Lord Cawdor was nominated President of the Association, Lord Dysart and Lord Calthorpe Vice-Presidents, and Mr. J. Howard Treasurer. A committee was appointed consisting of the President, Vice-Presidents, Treasurer, Mr. R. W. Perks, M.P., Mr. W. R. Arbuthnot, Captain Cundy, Mr. J. P. Stilwell, Mr. H. Manfield, Mr. W. McArthur, M.P., Colonel Clifton Brown, and Mr. J. J. Bowley.

The Opium Question is apparently still regarded as an open one by the Society for the Suppression of the Opium Trade, since that body has published a summary of its correspondence with the Secretary for India on the subject of poppy cultivation in the Dependency. It reminds his lordship that, even from the Indian point of view, the present system of opium production is liable to grave objections, as being oppressive and unprofitable to the ryots, and calls attention to the "grave scandal" of giving liberal advances for irrigation to "produce poison" for China, rather than food for the famine-stricken people of India. The Society, in conclusion, reiterates its conviction that this trade is "a great national sin."

The Irish Apothecaries' Company has, we are informed, adopted a resolution protesting against the action of the Institute of Chemistry in examining candidates in therapeutics, pharmacology, and microscopy. Candidates for the examination referred to in the resolution are required to show a general knowledge of the therapeutic effects of poisonous chemicals and crude drugs, and of the quantities which would be injurious or fatal to man, if taken internally. According to the terms of the resolution, the Governor and Company of the Apothecaries' Hall of Ireland are of opinion that the action of the Institute is equivalent to examining candidates in therapeutics and issuing certificates of qualification in that subject. They are further of opinion that such action constitutes an infringement on the rights of the medical profession, and the Company's representative on the General Medical Council is to be requested to ascertain the legality of the practice.

It is far from Obvious how the action of the Institute of Chemistry can infringe any rights of the medical profession, and it would be a regrettable circumstance if the holding of the examination in question were interfered with, since it satisfies a distinct want. The authorities of the Institute recommend any candidate desiring to qualify himself for appointment as public analyst to take a course of instruction in therapeutics, pharmacology, and microscopy, and an examination has been specially devised to test the candidate's skill in the analysis of food and drugs, and of water, in addition to his knowledge of therapeutics, pharmacology, and microscopy. The Local Government Board for England and Wales, and the Local Government Boards for Scotland and Ireland, accept the Certificate of Fellowship or Associateship of the Institute, together with the certificate granted on passing the examination in therapeutics, pharmacology, and microscopy, conducted on lines approved by the Boards, as sufficient documentary evidence of the qualifications requisite for appointment to the office of public analyst under the Sale of Food and Drugs Act, 1875-1899, so that the examination does not lack official recognition.

POISONING CASES.

Sixteen deaths by poison have been reported during the past week—two accidental cases and fourteen suicides, thus:—

Poison.	Accident.	Suicide.
Ammonia	—	1
Carbolic Acid	—	4
Chlorodyne	—	1
Hydrochloric Acid	—	1
Laudanum	1	1
Oxalic Acid	—	3
Potassium Cyanide	—	2
Prussic Acid	1	1

Ammonia was taken with suicidal intent by the daughter of a Lancashire tradesman.

Carbolic Acid was the cause of four suicidal deaths, including a young married woman at Norwich, an aged couple at Heaton Norris, and a woman at Weston-super-Mare, who appears to have purchased the poison from Mr. E. Norman, a local chemist, who had been careful to label the bottle properly.

Chlorodyne caused the death of a widow residing at Bagshot. She appears to have taken an overdose intentionally, since she left a letter containing instructions regarding her place of burial. Nevertheless, the jury returned a verdict of death from misadventure.

Hydrochloric Acid was taken by a Hoxton cabinet carver aged sixty, who had been drinking heavily for some time past.

Laudanum drunk by a general dealer at Sunderland, who had been in the habit of purchasing large quantities for veterinary use, was apparently taken in excessive quantity through inadvertence. The same poison was purposely taken by a commercial traveller at Glasgow.

Oxalic Acid obtained for the purpose of cleaning brass was taken by a married woman (34) at Blackburn, also by a gardener's wife (53) at Linchmere. Both had been worried about money matters. The same poison appears to have been taken by a Clerkenwell man, who died at St. Bartholomew's Hospital.

Potassium Cyanide was taken by a jeweller at Highbury, also by a Mayfair provision merchant.

Prussic Acid caused two deaths—one victim being a chemist's assistant, named William Edwards, at St. Rollox, Glasgow, and the other a child, aged two and a-half years, who swallowed "about half a thimbleful" of the poison left in a bottle, which it found on the mantelshelf in a bedroom. Mr. J. M. Smith, a Maryport chemist, said he had given "about a teaspoonful and a-half" of prussic acid to the child's father who was occasionally employed by him, for the purpose of poisoning a dog. Most of the poison appears to have been used for that purpose, but sufficient was left in the bottle to cause the child's death as recorded.

Non-Fatal Cases.—Numerous cases of attempted suicide by poison have been reported during the past fortnight, carbolic acid having been taken in two instances, belladonna liniment, copper sulphate, hydrochloric acid, oxalic acid, or nitric acid in five others, while laudanum was preferred by no less than ten persons, who seem to have been in a more or less reckless or despondent condition. In reports of two other cases, which occurred at Pendleton and Wolverhampton respectively, the names of the poisons used are not specified.

Obituary.

Mornement.—On May 3, Henry J. Mornement, Chemist and Druggist, Southtown, Great Yarmouth. Aged 83.

Skinner.—On April 26, John Skinner, Chemist and Druggist, Govan. Aged 62.

Stonham.—On May 5, Thos. Goland Stonham, Chemist and Druggist, Maidstone, Kent. Aged 81. Mr. Stonham, who had been in indifferent health for several years, served his apprenticeship at Rye, Sussex, and, after spending some time in London, entered the pharmacy of Messrs. Argles and Duke, of Bank Street, Maidstone. On the death of Mr. Duke Mr. Stonham was taken into partnership, and he retired from the business in 1899, when Mr. F. J. Oliver took over the business. Of Mr. Stonham's sons two have served in South Africa; one—Major Stonham—recently returned home.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

Vinegar of Squill.

At Highgate Court House, on April 30, before Sir John Glover and other magistrates, Mr. Joseph Reed, chemist and druggist, 27, Turnpike Road, Hornsey, N., was summoned for selling vinegar of squill deficient in acetic acid to the extent of 38 per cent. The analyst's certificate stated that the sample contained only 2·57 per cent. of acetic acid, whereas it should have contained at least 4·2 per cent.

Mr. A. L. Bridge, an inspector under the Sale of Food and Drugs Acts, prosecuted, and Mr. C. H. Kirby defended on behalf of the C.D.A.

Mr. Bridge, who proved the purchase of the article, said that vinegar of squill made according to the B.P. should contain 4·27 per cent. of hydrogen acetate.

Mr. Edward Bevan, public analyst, formally supported his certificate. He said vinegar of squill contained glucosides and a little albuminous matter. In the sample examined he found only 2·57 per cent. of acetic acid and a certain amount of extractive matter. It would take him six months to make a complete analysis, and then he should be in the dark; it was such a complicated subject. Some of the acetic acid in the preparation might combine with constituents in the squill in three or four years, but that would not affect the combined acetic acid nor the extractive, the total amount of which, in properly made samples, should be 9 per cent. The preparation was liable to a fungous growth. It also contained a minute quantity of calcium oxalate, tannic acid, and other substances. No real decomposition took place on keeping the preparation. The standard of 4·27 per cent. was the strength of the diluted acetic acid used in the manufacture of the vinegar of squill. He thought 0·07 per cent. sufficient to allow for the difference between that and vinegar of squill. The sample examined contained only 4 per cent. of extractive. He found both free and combined acetic acid. He was of opinion that his certificate contained sufficient evidence to show that the sample was not made in conformity with the Pharmacopœia.

Mr. Kirby pleaded, for the defence, that the certificate was bad, because the "percentages as under" were not stated, and because it did not state whether any decomposition had taken place which would interfere with the analysis. There was no standard for the amount of acetic acid which should be present in vinegar of squill. Mr. Bevan had given the figures for the amount which should be present in dilute acetic acid, but not more than 3·6 or 3·9 per cent. was found in freshly made vinegar of squill. The processes of maceration and filtration, with the consequent evaporation, tended to decrease the quantity of acetic acid. Acetic acid of the proper strength was originally used, but nothing like 4·27 per cent. could be recovered from the vinegar of squill. Moreover, the squill was the important medicinal ingredient.

Mr. J. S. Ward said the preparation in question was very liable to decomposition, the chief cause of change being the fungoid growth. The saccharine and albuminous matters combined with the acetic acid, the effect being to decrease the amount of free acid which might be found on analysis. He had experimented with the preparation, and found from 3·7 to 3·8 per cent. of acetic acid when freshly made. There was nothing in the analyst's certificate to show that the article was not originally made according to the Pharmacopœia. The acetic acid was merely a menstruum to use to extract the medical properties from the squill, and made no difference to the medicinal properties of the preparation. He said he could not say from the state of the present sample that it had not been made according to the Pharmacopœia. In five months a sample made with 4·2 per cent. acetic acid lost 0·71 per cent. The total solids would vary, as it was not possible to get a standard squill bulb any more than a standard potato.

Mr. T. Bennett corroborated the previous witness in all the main facts. He would not expect to find 4·2 per cent. of acid in a freshly prepared sample. The quantity varied from 3·3 to 3·6 per cent. The sample under discussion might have been prepared according to the Pharmacopœia.

The Chairman said the evidence was not such as to justify a conviction, and the case would be dismissed. The prosecution would have to pay the analyst's fee.

VINEGAR OF SQUILL.

At Tottenham Police Court, on May 1, before Dr. Daly and other magistrates, Mr. Eugène McSweeney, formerly manager to the Carlton Drug Stores, Limited, 433, Green Lanes, N., and Mr. S. C. Hudson, 601, Green Lanes, N., were summoned for selling vinegar of squill deficient in acetic acid.

The analyst's certificate stated that, in McSweeney's case the sample was deficient to the extent of 60 per cent. in acetic acid, containing only 1·56 per cent. instead of at least 4·2 per cent. In Hudson's case the deficiency was 40 per cent., the sample containing 2·5 per cent. acetic acid instead of 4·2 per cent.

Mr. A. L. Bridge, the inspector, conducted the prosecution on behalf of the local authorities, and Mr. C. H. Kirby defended Mr. Hudson on behalf of the C.D.A., and he also appeared for Mr. McSweeney, who is not connected with that Association. In order to save time, it was decided to take the two cases together.

Mr. Bridge, who proved the purchase of the articles, said it should be possible to extract from vinegar of squill as much acetic acid as was used in making it.

Mr. Edward Bevan, public analyst, certified to the accuracy of the certificates. He said the preparation was liable to decomposition, in a sense, if improperly stored. It was always liable to deterioration. He did not think it necessary to state that on his certificate, because nothing had occurred that would interfere with his analysis. The change in the reserve samples in Court was due to deterioration. The decomposition referred to in the Act was the putrefaction to which milk and such like articles were liable, and not to any decomposition which had taken place in a sample like the present. If milk were decomposed it could not be properly analysed afterwards, but in the present sample a proper analysis could be made although decomposition had taken place. The fungoid growth in the sample was not exactly putrefaction, though the growth was due to the decomposition of the liquid in which it was growing. He doubted whether it affected the quantity of acetic acid present. He could not state, as a fact, from the sample, whether the deficiency was the result of decomposition or deterioration. He could not distinguish, by the result, whether the substance had undergone decomposition or not. The sample had not undergone decomposition which would interfere with his analysis. He could not say how much acetic acid had been present originally.

A lengthy discussion took place at this point as to the meaning of the decomposition clause, Mr. Kirby arguing that the statement should appear on the certificate respecting "any article liable to decomposition." The fungoid growth showed vinegar of squill to be liable to decomposition, which would affect the quantity of acetic acid present.

Mr. Bridge contended, on the other hand, that the Act only referred to such decomposition as would interfere with the analysis. Unless this was so the analyst was not asked to state his opinion on the certificate.

The magistrates decided that the Act only referred to decomposition which would interfere with the analysis.

Mr. Bevan, on further cross-examination by Mr. Kirby, would not deny the correctness of the statement in White and Humphrey's 'Pharmacopedia,' that there were three glucosides in squill, but he did not think the acetic acid had combined with the constituents of the drug to any appreciable extent. He included the combined acetic acid in the amount of acid present. There were calcium salts present, and they might form acetates. Dilute acetic acid contained 4·27 per cent. of acid, but he stated on his certificate that vinegar of squill should contain "at least" 4·2 per cent. of acetic acid. He did not suggest there should be more, but samples had been found to contain 4·2 per cent. He expected to find about 9 per cent. of total solids. If, therefore, there could only be 91 per cent. of dilute acetic acid, the results did not go arithmetically. He knew of no published figures as to what ought to be in the finished article. There was no standard. He could give no reason why the specific gravity was omitted from the present Pharmacopœia. Allowing that the squill contained 5 to 10 per cent. of moisture, it would have little effect on the final result. Maceration and filtration did not affect the result to any great extent. Possibly his standard might be a little too high.

Mr. William Chattaway, F.I.C., superintendent of the Laboratories of the Society of Apothecaries, said vinegar of squill might deteriorate slightly when properly stored, but he did not think the sample in question should have been sold. After that day's proceedings he thought it would be advisable to add the decomposition clause to the certificate. He could not support a standard of 4·2 per cent. of acetic acid. There was no standard, and it would need a large number of experiments, under different conditions, to establish one. He did not think the percentage should go appreciably below 3·8. He had made a sample, and after four months found it contained 4·1 per cent. He could not account for that if all the solids were present. The matter required further investigation.

Mr. Kirby said that, in McSweeney's case, the defence was that a sufficient disclosure had been made to the inspector before purchase. In both cases the certificates were bad because no statement had been made that the article was liable to decomposition, and there was no standard for the amount of acetic acid which should be present.

Mr. Martin Priest, F.I.C., said that, if the preparation yielded 9 per cent. of total solids, it would be possible to get 3·89 per cent. of acetic acid if originally made with an acid containing 4·27 per cent. He could not say that even this percentage of acetic acid could be obtained except on Mr. Bevan's figures; it was a theoretical result which did not allow for any decomposition which might take place. There might be further loss of acetic acid due to chemical change. Evaporation might also decrease the quantity of acetic acid present. Squill contained many complex substances, and was liable to decomposition, which would reduce the amount of acetic acid present. He could not certify, by testing for acetic acid alone, that a sample was not made according to the British Pharmacopœia. There was no known standard for the amount of acetic acid which should be present in vinegar of squill. The greater the amount of total solids present, the less acetic acid there would be. The figure of 3·89 per cent. was obtained merely from calculation, not from experiments. He thought that vinegar of squill, when freshly prepared, would yield about 0·3 per cent. of acetic acid below the figure 3·89. He would send out a sample containing only 4 per cent. of total solids if he had made other samples and found that they yielded this result.

Mr. H. S. Coupland, pharmaceutical chemist, said he agreed as to the liability to decomposition, and that there was no standard for the amount of acetic acid which ought to be present. The latter was used merely to dissolve the medical constituents of the drug. He thought 1·56 per cent. of acetic acid might be a fair sample to pass under certain circumstances. A sample he had analysed when freshly prepared gave 3·81 per cent.

Mr. C. T. Bennett agreed that the article was liable to decomposition and that there was no standard. He would not have passed the present sample if it had yielded the present figures on being freshly prepared.

Mr. Eugène McSweeney said he had only been two or three hours in the shop when Mr. Bridge called. Mr. Bridge asked Mr. Wheeler for some vinegar of squill, which was supplied from a stock-bottle. Witness noticed that it was very muddy, with sediment at the bottom, and said to Mr. Wheeler, "I should not give him that." Mr. Bridge then said, "I can compel you to give it." The Inspector asked him why he objected to supplying him with it, and he replied that it appeared to be old. Mr. Bridge asked for a "sample" of vinegar of squill, and volunteered the statement that he was buying it "in the interests of the medical profession."

Mr. J. E. Wheeler said he was the liquidator of Carlton's Drug Co., Limited. He corroborated the previous witness. Mr. McSweeney told the Inspector he would not sell it to an ordinary customer.

The Chairman said that the summons against the defendant McSweeney would be dismissed without costs. Mr. Hudson would be fined 10s. and costs. The Bench intimated their willingness to state a case on the validity of the certificate, if application were made.

Liniment of Soap.

In the King's Bench Division, London, on April 30, before the Lord Chief Justice and Justices Darling and Channell, sitting as a Divisional Court, an appeal was heard from a decision of Mr. d'Eyncourt, metropolitan police magistrate, Clerkenwell, who, on November 30 last (see *P.J.* [4], **13**, 654), fined Boots (Southern), Limited, for selling liniment of soap made with methylated alcohol. Subsequently a rule *nisi* was obtained calling upon the magistrate to show cause why a mandamus should not issue ordering him to state a case for the opinion of the High Court on the grounds (1) that the question of the ownership of the premises upon which the sale took place was in dispute, (2) that the case was adjourned and reopened after it had been decided and the appellants convicted, and (3) the exclusion of evidence as to the existence of a commercial standard of liniment of soap apart from the Pharmacopœia standard, and with respect to the sale not being to the prejudice of the purchaser. The facts were stated in affidavits.

Mr. Beck, who appeared for Boots, Limited, stated that he called evidence to show that Boots, Limited, were not in possession of the shop at the time the liniment was sold, although there was an agreement to purchase the premises from Messrs. Day. Further, the medical witnesses called admitted that liniment of soap, made with methylated spirit, had the same effect medicinally as when made with rectified spirit, though it had an offensive smell, and some patients, consequently, could not use it. The price at which it was sold was about half that charged for liniment made from rectified spirit. The magistrate, on this evidence, held that the defendants were the owners of the business, and that the sale was to the prejudice of the purchaser, and convicted the defendants, fining them £20 and 10 guineas costs, refusing to hear further evidence as to the sale not being to the prejudice of the purchaser, or to the effect that there was a standard of liniment of soap apart from that of the British Pharmacopœia.

Mr. D'Eyncourt had filed an affidavit in reply, in which he said he had found, as a fact, that at the date of the alleged offence the defendants were owners of the premises, and were, by their agents or servants, also the sellers of the article complained of; that the sale was to the prejudice of the purchaser, and, therefore, on these grounds, which were matters of fact, he considered the application to state a case frivolous. As to the exclusion of evidence to the effect that there was no sale to the prejudice of the purchaser, he actually heard one witness to that effect, and gave defendants an opportunity to call others if they wished. As to the refusal of evidence to the effect that there was a commercial standard of soap liniment, he was of opinion that it was useless, as the case was indistinguishable from that of Dickins v. Randerson, already decided. On these points, also, he held that the application was frivolous, and that the granting of a case was unnecessary.

Mr. Newton Crane appeared to show cause against the rule; Mr. Macmorran, K.C., and Mr. Bonsey in support of it.

Ultimately their lordships said that as the evidence stood it was not sufficiently clear what the evidence was, and the rule must be made absolute to state a case.

Spirit of Nitrous Ether.

At the West Riding Police Court, on April 26, Wm. Allen, of Knottingley, was summoned for selling sweet spirit of nitre which was not of the B.P. standard of strength and quality, and he was ordered to pay 26s. 6d. costs. Defendant said that he was "new to the business," and had at times neglected to replace the stopper in the bottle.

Spirit of Nitrous Ether.

At Melksham Police Court, on May 1, Mr. H. S. Annal, chemist and druggist, of High Street, Melksham, was charged on February 21 with selling sweet spirit of nitre not of the nature and substance asked for. The analyst's certificate showed that the drug only contained one per cent. of ethyl nitrite. It was not suggested that there was any intention to defraud, as the deficiency was evidently caused by evaporation. Defendant did not dispute the facts, and the Chairman (Mr. Stratton) said there was evidently no intention to defraud. A fine of 10s., including costs, was imposed.

Pharmacy Act (Ireland), 1875.

At the Southern Divisional Police Court, Dublin, on May 2, before Mr. Swifte, F. W. Sweny, chemist and druggist, of 1, Lincoln Place, Dublin, was summoned, at the instance of the Pharmaceutical Society of Ireland, who complained that on February 11 he kept his shop open for compounding medical prescriptions, contrary to the Pharmacy Act (Ireland), 1875, he not being properly qualified according to law. The evidence showed that Mr. F. W. Leslie, the Society's inspector, visited defendant's establishment on

February 11, and got a prescription made up by Mr. Sweny, and that there was no one else in the shop.

For the defence it was stated that the establishment belonged to a limited liability company, of which Mr. Sweny is manager, two members of which are members of the Society. A member of the Society was engaged daily in the shop, from morning until night, to make up prescriptions, and he happened to be at dinner when the inspector called. It was contended that no offence was committed under the Act, as there was no sale.

Mr. Swifte said he would reserve his decision.

At the Southern Divisional Police Court, on May 2, before Mr. Swifte, Frederick J. Adams, of 24, Aungier Street, was summoned for having compounded a medical prescription contrary to the provisions of the Pharmacy Act, 1875.

The evidence showed that Adams is an apprentice in Dr. Kenna's establishment, and that an inspector of the Society called and had a prescription made up by defendant, who is only nineteen years of age.

For the defence it was stated that, when the inspector called, Dr. Kenna was at dinner in a room off the shop, but that Adams went to him and received instructions how to make up the medicine, and that he made it up from those instructions. Defendant was near the end of his apprenticeship, and, in fact, knew how to dispense the prescription.

Mr. Swifte said he would give his decision three weeks hence.

At the Southern Divisional Police Court, Dublin, on May 2, before Mr. Swifte, Josephine Preston and Margaret M'Dermot, trading as Bowers and Co., 164, Great Brunswick Street, were charged with having kept open their establishment for the compounding of a medical prescription contrary to the provisions of the Pharmacy Act, 1875, not being properly qualified.

Mr. W. Scallan appeared for defendants, and applied for an adjournment of the case for three weeks, and, Mr. Clay not opposing, the summons was adjourned.

PHARMACY IN AUSTRALASIA.

(*From our Melbourne Correspondent.*)

The Pharmacy Board of Victoria, in its report for the year 1901, expresses regret that the hopes entertained during an early part of the period that the greatly desirable interchange of pharmaceutical certificates between the various States of the Commonwealth would be arranged before its close had not been realised. The statement of resolutions which the New South Wales Board proposed for discussion at a conference contained clauses which would have denied recognition of certificates of Great Britain, and also provided for the renunciation of the reciprocity compact by any of the contracting States giving six months' notice. The Victoria Board decided that it could not be represented at the conference unless the clauses referred to were omitted from the programme to be discussed, and a uniform examination for all the States previously agreed upon. Negotiations appear to have closed at this point, but the Board expresses a hope that a further and satisfactory advance towards a settlement may be made at an early date.

The Much-Needed Amendment of the (Victorian) Poisons Act has not been advanced during the year. An amending Bill was, indeed, circulated in the Legislative Council on June 27, and remained on the notice paper to the end of the session, but it then shared the fate of other "innocents." As a result, the Board points out that under the exemption clause in the existing Act dangerous poisons, such as preparations of strychnine, arsenic, and cyanide of potassium, continue to be sold without the slightest retriction. It is hoped that the Board will be able to report an improvement in this condition of affairs next year.

The Employment of Unqualified Persons as managers in charge of branch shops is a subject which has engaged the special attention of the Board during the year. A communication was addressed to all chemists in business in the State, pointing out that they were not only an infringement of the Medical Act, Part 3, and the Poisons Act, but were also an injustice to those persons who had, after fulfilling all the requirements of the curriculum imposed under the Medical Act, been duly registered. Unless due notice be taken of this gentle hint, it is likely that offenders will find more persuasive measures taken during the present year.

The Melbourne College of Pharmacy is the subject of appreciative reference by the Board, as also by the Government Medical Officer, Dr. J. A. O'Brien, in his special report to the Chief Secretary. Dr. O'Brien writes:—"I have seen the subjects presented for the written and practical work, and attended some of the oral examinations. The conclusion formed is that a high standard of efficiency is aimed at by both teachers and examiners. The College of Pharmacy affords most complete and excellent material for the proper instruction of students. As regards the examinations held during the year, it is noticeable that the addition of geometry and algebra to the Preliminary—to which was attributed a reduction of the number of students presenting themselves in 1900 to 94, as against 182 in the previous year—is again held responsible for a further reduction to 68 in 1901. Of the latter number 30 passed. For the certificate of the College of Pharmacy (subjects. Chemistry, practical chemistry, materia medica, and botany) 142 students presented themselves, of whom 56 passed; and for the Final 62 entered, of whom 23 passed. In addition to the pharmaceutical students proper there also attended the College during the year 38 dental, 35 medical, and 32 special students. The College also provides a complete course of training for public analysts under the Victorian Public Health Act."

The Pharmaceutical Society of Australia.—At the March meeting of the Council it was reported by the Returning Officer that the four retiring members of the Council—Messrs. Buzza, Church, Shaw, and Strutt—had been returned unopposed. For the further vacancy caused by the resignation of Mr. H. T. Tompsitt, Mr. W. C. Kernott, of Geelong, was elected for the unexpired portion of Mr. Tompsitt's term of office. At the same meeting the committee appointed to watch the interests of pharmacists in connection with the Commonwealth Tariff had a very satisfactory report to present of the result of their efforts, practically all their suggestions with reference to Division IX. (Drugs and Chemicals) having been given effect to by the House of Representatives on February 25, when insecticides, sheepwashes, and disinfectants, on which the Government proposed to charge 15 per cent., were placed on the free list; while the proposed duty of 25 per cent. on patent and proprietary medicines, etc., was reduced to 15 per cent. As illustrating the extent of the committee's labours, the *Australian Journal of Pharmacy* states that, in addition to personally interviewing many leading men, nearly 1,000 circular letters had been distributed from the office of the Pharmaceutical Society to gentlemen whose sympathies it was desired to enlist; while their continued activity is evidenced by the more recent extensive distribution of a further circular in connection with Division XVI. (Surgical Appliances), with the object of securing an alteration of the rule adopted by the Customs Department that exemptions apply only to instruments and appliances used on a patient by a medical man, and not to such when used by patients themselves.

Pharmacy Board of New South Wales.—At the March meeting of this body the Registrar was able to make the gratifying announcement that the amount of £400 granted by Parliament had been paid into the bank to the credit of the Board, which had now a substantial balance in hand.

Registered Pharmacists' Society of New South Wales.—The annual meeting of this Society was held on March 13, when the President (Mr. Newman) reported the position of the Society as very satisfactory. Its sphere of usefulness and influence was steadily enlarging; it had lost none of its old members, except by death; and the new year would be started with twelve new members, and a good cash balance, which would enable them to extend their operations. During the year they had been able to get the Dental Act amended in a manner most important to their interests; the Early Closing Act had also been amended through the instrumentality of the Society, and they had very little to complain of so far as its operations were concerned. Among matters to be taken into consideration in the coming year should be included the more effective administration of the Poisons Act, and the question of reciprocity. Something definite should be done with regard to the latter, but he considered it should be carried out on a satisfactory basis to New South Wales. The Pharmacy Act and its privileges were the result of years of work, and those privileges should not be lightly renounced. In moving the adoption of the balance-sheet—which showed an income of £71 7s. 6d. from subscriptions, and £3 2s. 6d. from diplomas—the Hon. Secretary (Mr. R. T. Bellemey) referred to the desirability of establishing a final course of training for pharmacists in connection with the University. He did not wish to imply that the lecturers or examiners at present appointed by the Pharmacy Board were incompetent, but he considered that the Final examination should be conducted by and have the stamp of the University authorities, who had promised, if the Board paid them £100 per annum, to establish classes and appoint examiners. This should be done, and the pharmacist, as a result of his years of labour and training, should receive a distinct degree from the University. If the Pharmacy Board had to pay £100 a year, it could be well afforded, as the Government had granted them £400 for carrying on the work.

REVIEWS AND NOTICES OF BOOKS.

'Familiar Wild Flowers.' By F. E. Hulme, F.L.S., F.S.A. New enlarged edition. In parts, 6d. each. Cassell and Co.

The public are already familiar with Mr. Hulme's artistic delineations and popular descriptions of wild flowers, and Messrs. Cassell have evidently found it worth while to awaken further interest in our wild plants. This is just the sort of book that in holiday time one would be glad to see on a table in the apartments or hotel where one is staying, so as to turn to it for a picture of some local or interesting plant that forms a marked feature of the district at that particular time of year. Mr. Hulme has made an excellent choice of subjects, the flowers being selected from the most striking or most beautiful plants of mountain, plain, wayside, river bank, or woodland, etc. Thus, in Part I., those who visit the country at Eastertide will find the butterbur portrayed, a plant whose flower is not generally known, though its immense leaves can hardly be passed unnoticed in summer by anyone who goes fishing or boating, or rambles by the river side. In the same number the mountain climber will find the bird's eye primrose; in Part II. the butterwort and the globe flower; the wanderer through fields will recognise the hogweed and dyer's green-weed; the visitor to southern watering places, the Gladwin iris and the *Œnanthe crocata* or hemlock water-dropwort. The last is one of the most poisonous plants of this country, with the appearance and properties of which every one ought to be familiar. Sufficient is said in most cases to enable an ordinary observer, with the aid of the coloured drawings, to recognise the several plants, so far as form and habit goes; but while the artist and author has done his part well, quite as much cannot be said for the printer. The colours in some cases are anything but natural, as in the illustrations of hare's foot, trefoil, and the black horehound. In the majority of instances, however, the tint is sufficiently near for the purpose, as in the butterbur, hogweed, and others. In no case has the artist foreshortened so severely as to render the real shape of the leaves unrecognisable, as artists who are not also botanists are apt to do. The meaning of the botanical names and the history often attaching to them, lends an additional interest to the description of the plants. One could wish, perhaps, that in the case of *Œnanthe crocata* figures of the characteristic fruit and root were given, so that the plant might be more easily recognised, with the view of preventing the frequent cases of poisoning of both human beings and animals that takes place from eating its roots. Messrs. Cassell and Co. are to be congratulated on endeavouring to make this popular work of educational use to young people. This they have done by offering one hundred prizes for the best collection of wild flowers. These are to be in three divisions:—The first for children up to ten years of age, the second for young people ten to fourteen years old, and the third for those between fourteen and nineteen. These specimens must exhibit the characteristic portions, the collections must be the *boná-fide* work of the competitors, and as they must comprise respectively only twelve, thirty, or one hundred specimens of the plants figured and described in the work, destruction of very rare plants is not likely to take place. Full particulars of the competiton rules are given at the end of Part II. Part VI. (we have not received the intermediate parts) begins with the bluebell and ends with the harebell, and all the plants illustrated in it, except the harebell and *Iris pseudacorus*, may be found in flower in May. Although providing little information concerning the medicinal uses of plants to interest the pharmacist, the little it gives does not quite accord with the knowledge pharmacists possess concerning the plants. Thus, under *Taraxacum*, it is stated, concerning the roots, that "from their somewhat powerful (*sic*) medicinal properties some little care is requisite in their use," and, under *Vinca major*, that it is reputed to be soothing and healing in all inflammatory ailments of the skin, no mention being made of its hæmostatic properties. *Ranunculus ficaria*, *R. aquatica*, *R. auricomus*, and *R. bulbosus*, *Lamium album*, *L. purpureum*, *Orchis mascula*, and *Allium ursinum* are the other plants described. The information given concerning the origin and meaning of some of the botanical names will, however, probably interest some of our readers, especially that concerning the names *non-scriptus* and *agraphis*, applied to the bluebell. The colouring of the illustrations is not all that could be desired, and somewhat mars the effect of the artistic but very natural drawings, which, if uncoloured, could hardly fail to enable the reader to recognise the plants.

PRACTICAL NOTES AND FORMULÆ.

Dusting Powder for Infants.

The following formula, by Riva-Rocci (*Gaz. Med. Ital.*), yields a dusting powder which may be used with safety for infants of the most tender years:—Venetian talc and powdered chalk each 7 ounces; crystallised carbolic acid, 3 grains; oil of lemon, 40 minims.—*B. M. J. Epit.*, April 26, 1902.

Adhesive Rubber Plaster.

Gutta percha in thin sheets, 20; resin, 30; dammar, 20; linseed oil, 30; phenol, 3; dried wheat starch, 60. Melt the resins with the oil in a capacious dish over a naked flame. Strain while hot, add the gutta percha, mix, and incorporate the starch previously dried at 120° C. Add the phenol to the partially cooled mass. Spread on cloth and cover the face of the plaster with muslin before rolling up. Dammar may be replaced by copal, which gives a plaster similar to the American rubber article.—*Pharm. Central.*, **42**, 553.

Sterilised Iodoform Oil.

A. Ten Bosch thus prepares a sterile solution of iodoform in olive oil. Place 10 Gm. of iodoform in a yellow glass bottle of the capacity of 120 C.c., and add to it 60 C.c. of a 1 : 1000 solution of $HgCl_2$. Shake together thoroughly so as to sterilise the iodoform, and add 3 Gm. of olive oil, previously sterilised by heat. Again shake up until the iodoform forms a homogeneous mass with the oil. Allow to separate, decant, and reject the aqueous portion, thoroughly draining out the last trace of water, then add 87 Gm. of sterile olive oil.—*Journ. Pharm. Chim.* [6], **14**, 570.

SOCIETY OF PUBLIC ANALYSTS.

At a meeting of the Society of Public Analysts, held on Wednesday, May 7,

Mr. H. Wippell Gadd read the following

Notes on Some Drug Standards.

In the March number of the *Analyst*, in his "Notes on the Analysis of Drugs," Sir Charles Cameron criticised some of the unofficial standards which I published, in conjunction with Mr. C. G. Moor, in my 'Synopsis of the British Pharmacopœia.' The first of these is

Tincture of Asafetida,

the standard for total extractive in which we fixed at 10 per cent. W/v, after carefully considering the solubility of the gum in alcohol of different strengths and examining many commercial samples. Sir Charles Cameron states that it should be 5 per cent., giving as his reason that he finds this to be the amount yielded by a specially-prepared tincture. It would be interesting to know what sort of gum was used in preparing this tincture, for, as is well known, it is very difficult to obtain a gum in commerce which will conform with the requirements of the Pharmacopœia, and practically it is usually necessary to use an excess and standardise the tincture to the required amount of extractive. I have recently prepared a tincture, on the experimental scale, from a selected gum (which fell well within the B.P. limits, as it yielded only 3 per cent. of ash), and the resulting product yielded 10·9 per cent. solid residue. Whilst on the subject of asafetida, I should like to call attention to the powdered gum, which is, of course, an official article, as it is used in the preparation of two pills. To the difficulty of getting a gum answering the official requirements is added, in the case of the powder, that of keeping it as such. The average percentage of ash yielded by a few commercial samples which I have examined is 61·94. Of course, if the pure gum is reduced to powder, it speedily agglutinates and forms a solid mass. I have tried to overcome this difficulty by adding about 12½ per cent. of powdered sugar of milk to selected gum, a form of adulteration which would seem to be excusable under the circumstances, especially as the product answered the pharmacopœial requirements, yielding only 4 per cent. ash, and 66·5 per cent. soluble in alcohol (90 per cent.). The other preparation referred to by Sir Charles Cameron is

Tincture of Nux Vomica,

the alcoholic strength of which, by a printer's error, was given in the 'Synopsis' as 45 per cent. by volume; this, of course, was meant for 65 per cent., but Sir Charles Cameron maintains that the right figure is 52·2. I have found commercial samples to vary from 64·4 to 67·9, and, seeing that the tincture is made from a liquid extract which, by its method of preparation, must necessarily vary in alcoholic strength, I do not think that the strength of the tincture can be expressed by a single whole number, certainly not by a decimal fraction. This will be more obvious if we consider the liquid extract. I have found samples to vary in alcoholic strength from 59·34 per cent. to 67·42 per cent., the average being 63·57 per cent. The Pharmacopœia orders that 16 parts of powdered nux vomica beans shall be treated with alcohol (70 per cent.) until 12 fluid parts have been collected. This strong percolate is reserved, and percolation continued with the same menstruum until the powder is exhausted. The resulting product is evaporated to 1 fluid part and then diluted with 3 fluid parts of alcohol (90 per cent.), and the mixture added to the reserved portion. The amount of strychnine is then estimated (by a process which is totally untrustworthy unless modified), and we are officially directed to dilute the extract until a preparation containing 1·5 per cent. of strychnine is obtained. A liquid extract made exactly by this method would have an alcoholic strength slightly under 70 per cent., but to obtain such we must start with a nux vomica containing at least 1·5 per cent. of strychnine. I have not been fortunate enough yet to meet with a sample of more than half this strength, the average of commercial samples examined during the last two or three years being 0·6 per cent. It has, therefore, been found necessary to use rather more than double the official quantity of beans, and consequently the amount of extractive obtained in the percolate has been so excessive that it has been almost impossible to reduce the latter to the 1 fluid part specified in the Pharmacopœia, and consequently either a stronger alcohol than 90 per cent. has to be used for diluting or the alcoholic strength will be considerably reduced. The tincture is made from the fluid extract by mixing 2 fluid parts of the latter with 3 parts of water and 7·4 fluid parts of alcohol (90 per cent.), the resulting product measuring 12 fluid parts. Taking the alcoholic strength of the liquid extract as 60 per cent., theoretically the strength of the tincture should be just over 65 per cent., so that there would seem to be no necessity to alter the standard, but it would, of course, be unreasonable to condemn a sample which was not more than 1 or 2 per cent. below this. In thanking Sir Charles Cameron for his kindly criticisms, I may point out a slip in his notes. Under

"Syrup of Ferrous Phosphate with Quinine and Strychnine,"

he is made to say that "every 100 C.c. of the syrup should contain 14·8 Gm. of quinine sulphate and only 0·57 Gm. of strychnine." These quantities are exactly ten times those of the Pharmacopœia, and the removal of the decimal point might lead to serious results if the error was left uncorrected.

HUDDERSFIELD AND DISTRICT CHEMISTS' ASSOCIATION.

The smoking concert arranged in connection with the above Association for Wednesday, April 30, passed off satisfactorily. The attendance was not so large as had been hoped, but a very cordial feeling pervaded the gathering. The President (Mr. R. C. Walshaw) guided the proceedings, which included various musical items, all of which were rendered with good effect by the members and friends assisting. The ex-President of the Dewsbury Association (Mr. W. Stead), was present, and contributed to the evening's enjoyment.

ROYAL INSTITUTION.

The annual meeting was held on May 1, Sir James Crichton Browne in the chair. The annual report of the Committee of Visitors for the year 1901, testifying to the continued prosperity and efficient management of the Institution, was read and adopted, and the report on the Davy Faraday Research Laboratory of the Royal Institution which accompanied it, was also read. Forty-four new members were elected in 1901. Sixty-three lectures and seventeen evening discourses were delivered in 1901. The books and pamphlets presented in 1901 amounted to about 253 volumes, making, with 722 volumes (including periodicals bound) purchased by the managers, a total of 975 volumes added to the library in the year. Thanks were voted to the President, Treasurer, and the Honorary Secretary, to the Committees of Managers and Visitors, and to the Professors for their valuable services to the Institution during the past year.

Election of Officers.

The following gentlemen were unanimously elected as officers for the ensuing year:—President, The Duke of Northumberland; Treasurer, Sir James Crichton-Browne; Secretary, Sir William Crookes; Managers, The Right Hon. Lord Alverstone, Sir James Blyth, Bart., Sir Frederick Bramwell, Bart.; Dr. Thomas Buzzard, Dr. Donald Hood, Sir Francis Laking, Mr. George Matthey, Dr. Ludwig Mond, Dr. Hugo Muller, Mr. Edward Pollock, Sir Owen Roberts, Sir Felix Semon, The Right Hon. Sir James Stirling, Mr. John I. Thornycroft, and Mr. James Wimshurst; Visitors, Dr. Henry E. Armstrong, Dr. Charles Edward Beevor, Mr. John B. Broun-Morison, Mr. Francis Elgar, Mr. Francis Gaskell, Dr. Dundas Grant, Lord Greenock, Mr. Maures Horner, Sir Henry Irving, Mr. Wilson Noble, Mr. W. R. Pidgeon, Mr. Arthur Rigg, Mr. W. S. Squire, Mr. Harold Swithinbank, and Mr. Charles Wightman.

Nomination of Vice-Presidents.

A general monthly meeting was held on May 5, the Duke of Northumberland, President, in the chair. Dr. Alfred Hillier, Mr. Sydney Lupton, Mr. Carl F. von Siemens, and Mrs. C. F. von Siemens were elected members. The special thanks of the members were returned to Sir Thomas Sanderson, G.C.B., K.C.M.G., for a donation of £5 5s. to the Fund for the Promotion of Experimental Research at Low Temperatures. It was announced that the Chairman had nominated the following Vice-Presidents for the ensuing year: The Right Hon. Lord Alverstone, Sir Frederick Bramwell, Dr. Donald Hood, Mr. George Matthey, Dr. Ludwig Mond, the Right Hon. Sir James Stirling, Sir James Crichton-Browne, and Sir William Crookes.

CHEMICAL SOCIETY.

At a meeting held at Burlington House, Piccadilly, on Wednesday, April 30, Professor Emerson Reynolds took the chair. There was a good attendance, and several interesting papers were communicated. After the usual business had been disposed of, the President called upon

Dr. Sidney Young to give a paper on the

Preparation of Absolute Alcohol from Strong Spirit.

Dr. Young said that it was well known that absolute alcohol could not be obtained by simple distillation. By this method the strongest obtainable was about 95 per cent. This was due, as had been pointed out by Le Bel, to the fact that there was a mixture of alcohol and water of constant boiling point which distilled at a temperature only slightly below that of absolute alcohol, hence a small quantity of water could not be eliminated by fractionation. In order to effect the removal of water entirely, the use of dehydrating agents was resorted to. In this connection the researches of Mendeleef and Squibb were mentioned. The former had used calcium oxide; Squibb had made use of the same substance, but had prepared his alcohol by percolating several times through freshly-burnt lime; in this way be obtained a lower gravity than Mendeleef had done. Dr. Young said that dehydrating agents did not act well on account of the close relationship between alcohol and water. Thus, in the case of phosphorus pent-oxide, phosphoric acid and ethyl phosphate were produced. Barium oxide and calcium chloride also formed compounds. Anhydrous copper sulphate had no action on ethyl alcohol, but with methyl alcohol somewhat striking results were obtained; it was found that after a time the copper sulphate went into solution without, however, any change in the colour taking place. The author then pointed out the behaviour of mixtures of benzene, alcohol, and water. He found that when alcohol about 93 per cent. was mixed with its own weight of benzene and the mixture fractionated, practically the whole of the water distilled off in the first portions. By repeating the process twice the water was entirely removed. Although the alcohol thus obtained was pronounced to be free from benzene by himself and his assistants, an expert in perfumery had detected the presence of traces. To eliminate this trace the alcohol was mixed with hexane and again fractionated. In all these experiments an essential feature is the use of an efficient stillhead. Dr. Young then went on to deal with the

Properties of Mixtures of Alcohol and Water.

He said that in the preparation of anhydrous methyl alcohol the use of dehydrating agents was entirely unnecessary providing that an efficient stillhead was used. He had attempted to isolate the mixture of ethyl alcohol and water of constant boiling point by fractionating mixtures of various strengths; this he had been unable to do practically, but he had obtained figures very close to the line on either side. With regard to the existence of a hydrate of propyl alcohol, he pointed out that some years ago Thorpe had proved that no hydrate of the iso-compound existed; there was great variance in the published formulæ for the hydrate of the normal alcohol. He found, however, that the water from the so-called hydrate could be frozen out; if a hydrate did exist it would probably be more stable at a lower temperature. The author then proceeded to describe briefly the application of fractional distillation to quantitative analysis. He said that if a mixture of two substances boiling, for example, at 100° and 120° respectively were carefully fractionated with an efficient stillhead, and the distillate up to 110° collected, then this would be approximately equal to the weight of the substance of lower boiling point. This was not applicable in a few cases—*e.g.*, alcohol and water, or if the quantity of the more volatile substance was small several fractionations would be required.

Professor THORPE complimented Dr. Young on the very interesting paper which he had read. With regard to the combination of alcohol and water, he said that there was a tradition in the Excise service that when alcohol and water were mixed it took some time for the association or combination of the two to take place. He had found that there was no experimental evidence in support of this. He had traced in the literature the origin of this myth. In the record of some experiments on the mixture by Gilpin it was stated that "the mixture had been put aside for some months in order to allow for the inter-penetration of their parts," and this had been copied into the books, and he thought this was the explanation of the idea. Dr. Divers pointed out that when anhydrous copper acetate was treated with methyl alcohol it went into solution; on boiling a crystalline substance, methoxy-copper acetate was formed.

Dr. ORTON then read a paper on

HIGHLY-SUBSTITUTED NITRO-AMIDO-BENZENES.

These substances were easily obtained from the corresponding anilines by treating a solution of the aniline in glacial acetic acid with nitric acid free from nitric oxide, and then adding a small quantity of acetic anhydride.

Dr. SCOTT next communicated a paper on

THE ATOMIC WEIGHT OF TELLURIUM.

The author said that this was a preliminary notice, and further work was proceeding. On heating tellurium with methyl iodide in a sealed tube on a water bath a beautiful red crystalline substance was obtained; this proved to be tellurium di-methyl di-iodide. On treating this substance with sodium sulphite and sodium carbonate a fine white crystalline substance, tri-methyl tellurium iodide, was obtained. This body was used for determining the atomic weight of tellurium, the mean of several concordant results giving the figure 127·70. As the specimens were being passed round for examination members were warned not to get any of the red compound on their hands on account of the intensely unpleasant smell which was evolved.

EDINBURGH CHEMISTS', ASSISTANTS,' AND APPRENTICES' ASSOCIATION.

The annual meeting of this Association was held in the Pharmaceutical Society's House, 36, York Place, Edinburgh, on Wednesday, April 30, Mr. J. G. SCLATER, President, in the chair.

The SECRETARY, Mr. P. K. Brown, read the

REPORT OF THE PRIZE COMMITTEE

on the examination for the pharmacy prize presented by Mr. J. Laidlaw Ewing, from which it appeared that the prize had been awarded to Mr. Thomas Lyon, pupil with Mr. George Lunan, 20, Queensferry Street, who had obtained 90 per cent. of marks.

The President, in the unavoidable absence of Mr. Ewing, presented Mr. Lyon with Greenish's 'Materia Medica' and Squire's 'Companion to the B.P.'

ANNUAL REPORT AND FINANCIAL STATEMENT.

The SECRETARY then read the annual report, and the TREASURER, Mr. John Wright, read the financial statement, from which it appeared that the membership showed an increase over the previous year, two very successful visits had, through the kindness of the City Astronomer, been paid to the City Observatory, interesting papers had been contributed to the meetings, a larger number of members had competed for the prizes, and there was a balance of £3 10s. in hand. The Committee expressed much regret that a larger number of members did not attend the meetings, that many more assistants and apprentices did not join, and that the valuable prizes offered for competition did not induce a keener competition.

Mr. PLENDERLEITH moved the adoption of the report and financial statement, including a recommendation that £1 1s. be sent to the Benevolent Fund of the Pharmaceutical Society as a recognition of the kindness of the Society in allowing the Association to meet in their house. This was seconded by Mr. HUTCHEON, and agreed to.

The PRESIDENT then proceeded to deliver his

VALEDICTORY ADDRESS.

This was supplementary to his former address on "The Pharmacist in Literature," which was published in the *Pharmaceutical Journal* of November 9 last and subsequent issues. On the present occasion attention was directed to a few literary men who began life as pharmacists or apothecaries, including Ambrose Godfrey Hanckwitz (see *P.J.* [1], **18**, 128, and [4], **1**, 166), John Newbery, Oliver Goldsmith, and Tobias George Smollett, but the address consisted mainly of a number of interesting anecdotes relating to the pharmacist in his connection with literary men.

On the motion of Mr. J. W. PLENDERLEITH, Vice-President, a cordial vote of thanks was awarded to the President.

ELECTION OF OFFICE-BEARERS.

The following were elected office-bearers for next session:—President, J. W. Plenderleith; Vice-President, J. G. Sclater; Secretary, Albert E. Kelly, 11, Elm Row, Edinburgh; Assistant Secretary, J. Garrow; Treasurer, E. O. Rowland; and as members of Committee, Messrs. Brown, Buist, Harley, Hutcheon, Lyon, Wood, Wright, and Tait; Prize Committee, the President, Vice-President, and Secretary, and Messrs. Cowie, Duncan and Harley.

PUBLIC DISPENSERS' ASSOCIATION.

A meeting of this Association was held at St. Bride's Institute, Ludgate Circus, on Wednesday, April 30, the PRESIDENT, Mr. W. Duff, in the chair. There was a good attendance. The first business was the election of Mr. G. F. Forster, a former Hon. Secretary of the Association, as an honorary member, after which a lady public dispenser was elected a member.

A REGISTER OF LOCUM TENENS.

On the motion of the HON. SECRETARY, Mr. H. T. Samuel, seconded by Mr. H. HEWITT, it was resolved that a register of locum tenens be formed, consisting of men of proved ability who have given satisfaction to members of the Association, and that all such selected men, if not members of the Association, be charged a registration fee of 2s. 6d.

THE COUNCIL ELECTION OF 1902.

The PRESIDENT stated that the Council of the Association had considered the list of those members of the Pharmaceutical Society who were offering themselves for election to the Council, and had decided to recommend the following as candidates, whom members of the Association would do well to vote for:—Messrs. Campkin, Carteighe, Glyn-Jones, Pickering, and Young.

After some discussion it was unanimously agreed to accept the recommendation.

Hospital Compounders.

In connection with the interim report recently presented by the Dispensers' Committee of the Pharmaceutical Council, Mr. W. E. Miller directed attention to a circular issued by the Pharmaceutical Society of Ireland to various hospital and dispensary authorities concerning hospital compounders, and he moved that a resolution be passed and sent to the Pharmaceutical Society of Great Britain, suggesting that something might be done on similar lines.

Mr. Spencer seconded the motion, and, after considerable discussion, it was carried, Mr. Welford pointing out that probably 60,000 prescriptions were dispensed in public institutions each day, about half of which contained scheduled poisons. This was a matter, therefore, that, in the public interest, ought not to be overlooked, especially as a Departmental Poisons Committee was sitting to consider the sale of poisons.

The President, having announced that a letter had been received from Mr. C. E. Pickering soliciting the support of the members of the Association at the approaching Council election, the meeting terminated.

CHEMISTS' ASSISTANTS' ASSOCIATION.

The last musical and social evening of the session, in connection with the C.A.A., was held at 73, Newman Street, W,, on Thursday, May 1. Mr. A. W. Waring occupied the chair, and there was a good attendance. An excellent programme had been arranged, including songs by Messrs. Latreille, Morley, Milner, Jones, Blin, Easton, Barker, Donelly, and Everson. Messrs. Coupland and Parker efficiently performed the duties of accompanists. Mr. H. Ffoulkes recited Calvorley's "Gemini et Virgo," which was well appreciated by the audience. During an interval the Chairman announced that a collection would be made on behalf of the Benevolent Fund. The sum collected amounted to 10s 6d. On the motion of the President a hearty vote of thanks was accorded to the Chairman, also to those who had taken part in the programme. A very enjoyable evening terminated about 11.30 by the singing of "God Save the King."

CARDIFF AND DISTRICT PHARMACEUTICAL ASSOCIATION.

At a meeting held on Wednesday, April 30, Mr. A. Hagon, Treasurer, in the chair, it was unanimously decided, upon the motion of Mr. R. Prust, which was supported by Messrs. H. S. Fargher and H. H. Prosser, to postpone the May meeting on account of the close proximity of the Coronation festivities. It was also decided that, as the picnic of 1901 proved to be so successful a gathering, another should be held this year in the month of July, and a committee composed of Messrs. H. S. Fargher, H. H. Prosser, R. Prust, J. D. Jenkins, J. Reynolds, and the Hon. Secretary was elected to make the necessary arrangements.

A discussion then took place on

The Stamping of "Patent" Medicines,

but, upon the proposition of Mr. Prust, Mr. Prosser seconding, it was decided to postpone this important matter, owing to the unavoidable absence of Mr. W. R. Hopkins, who was to have started the discussion.

A suggestion was made that smoking concerts should be held more frequently, and effect was given to that proposal by the unanimous decision to commence the winter session with one.

MIDLAND PHARMACEUTICAL ASSOCIATION.

At the annual meeting, held on Tuesday, May 6, the President, Mr. John Barclay, took the chair.

It was stated in the

Annual Report

that, owing to the number of donations to the funds which the Association has received, its financial condition may be regarded as satisfactory. Five new members have been added during the session. The pharmaceutical year is described as uneventful, and although the Council has been invited by the Council of the Pharmaceutical Society to hold meetings to discuss the proposed new Pharmacy Bill, it had not been thought desirable to do so, in the absence of any further steps on the part of the parent Society to obtain pharmaceutical legislation. As the report points out, the draft Pharmacy Bill has been approved by the Association, and further progress on the part of the Pharmaceutical Council must now be awaited. In conclusion, the Association is congratulated upon the fairly good attendance at the ordinary meetings, but, in view of the many important questions which appear likely to be brought up for consideration in the near future, the hope is expressed that a more general interest will be taken in the work of the Association, and that its attempts to voice the wishes of pharmacists in the Midlands will receive wider support.

The President, in moving the adoption of the report and statement of accounts, emphasised the importance of members taking a more lively interest in Association work, and thus enabling the Association to speak with more authority, as representing the Midland counties, upon the new legislation in connection with pharmacy which would shortly be brought to their notice. As to the past session, he claimed that it had been a fairly good one; the papers read had been interesting, and the attendances had been well up to the average. In the next session education would be one of the first subjects to come up for consideration; it was a particularly important one, at the present moment, in view of what had taken place in Scotland, where a scheme had been proposed for enabling pharmacists to obtain advantages under the Carnegie gifts to the Universities. Referring to the statement of accounts, Mr. Barclay added that the balance in hand was practically the same as it was last year.

Mr. J. T. Cattell seconded the motion, and it was agreed to.

Early Closing.

A letter was read from Lord Avebury to the effect that his lordship had been led to understand that the Association was in favour of the Early Closing Bill, and asking, if this was so, whether the Association could assist by petitioning in favour of it.

The President having reminded members that the subject had been discussed at one of the Council meetings, and a resolution passed to the effect that, whilst in sympathy with the early closing movement, the Association was not sufficiently acquainted with the terms of any particular Bill to give it support, it was agreed that the Hon. Secretary should reply to Lord Avebury to that effect.

Election of Council.

The report of the scrutineers showed that the Council had been re-elected as follows:—Birmingham and Aston, Messrs. F. H. Alcock, J. Barclay, T. Barclay, F. Barlow, G. H. Brunt, F. Stokes Dewson, W. M. Freeman, G. E. Perry, J. Poole, F. H. Prosser, W. C. Scott, A. Southall, A. W. Southall, C. Thompson, J. Wakefield, and T. Wakefield; Brierley Hill, Mr. F. R. Fletcher; Dudley, Mr. G. T. Owen; Moseley, Mr. W. Lowther; Stourbridge, Mr. W. R. Sellick; Walsall, Mr. J. O.

Morris; North Warwick, Mr. J. T. Cattell; Wolverhampton, Mr. F. J. Gibson; Coventry, Mr. J. Hinds; Handsworth, Mr. F. Smith; Oldbury, Mr. A. W. Gerrard; Sutton Coldfield, Mr. T. Cattell; Warwick, Mr. C. P. Pratt; Wednesbury, Mr. G. Morris.

Annual Dinner.

The annual dinner of the Association was held at the Great Western Hotel, Birmingham, at the close of the annual meeting, and Mr. J. BARCLAY again presided.

The PRESIDENT proposed the toast of the

PHARMACEUTICAL SOCIETY.

He said the need for fresh legislation was becoming more and more apparent; there were many abuses calling for removal, and there certainly was room for wonder that the results of meetings at Bloomsbury Square were so small. The Pharmacy Bill was a move in the right direction and, he thought, the approval accorded to Mr. Tocher's scheme of university education had added to the Society's reputation.

Mr. A. W. GERRARD, in replying to the toast, gave his personal experience to the effect that the Society had oftentimes proved of great assistance. The Pharmaceutical Society was what the members themselves made it and if those they sent to represent them did not do their duty, the members had it in their power to change the representation.

Mr. THOMAS BARCLAY proposed the toast of the

MEDICAL PROFESSION,

and spoke of the great progress and development of the profession. Every branch almost was now specialised, and he suggested that in time the pharmaceutical profession might in a similar way be specialised. He urged the need for the two professions working side by side for the benefit of the public and the benefit of themselves.

Dr. HALL EDWARDS, in replying, said he always looked forward to a pet scheme of his, that dispensing should be done by pharmacists only. He felt it wrong that medical men should dispense.

Mr. HOLLICK proposed the health of the Chairman, and in doing so took occasion to refer to recent prosecutions of chemists by the Inland Revenue, which, he contended, were not in accordance with the spirit of the law.

WOLVERHAMPTON AND DISTRICT CHEMISTS' ASSOCIATION.

At a meeting of this Association, held on Monday evening, May 5, Mr. S. PHILLIPS gave the juniors some

HINTS ON THE STUDY OF BOTANY.

He dwelt on the value of botany as a subject for study, not only on account of the knowledge acquired, but as a means of training the powers of observation and of critical attention to detail. He urged the desirability of pharmacists having a good training in botany, especially as this subject is not now a compulsory one in the medical curriculum. There will be fewer medical men who are botanists in the future, and chemists should be in a position to fill their places. Students were advised to commence their botanical study in good time and to acquire their knowledge gradually, to lose no opportunity of extending their acquaintance with plants during their country walks, and to help in this way Farmer's 'Practical Botany' and John's 'Flowers of the Field' were recommended as helpful books. Later on they should read the gracefully-written text-books of Dr. Scott. Attendance at the Technical School class in botany would be found helpful. It was not desirable that much time should be devoted at present to the mounting of herbarium specimens generally, but plants given in the Minor syllabus list should, as far as possible, be collected and mounted by the student. The local habitats of several of these official plants were mentioned by the lecturer. In conclusion, it was pointed out that for a proper understanding of many drugs in the materia medica a more extended knowledge of botany than was indicated in the Minor syllabus was required, and to illustrate this point a demonstration was given by the aid of diagrams of the double structure of lichens and of the life-history of *Claviceps purpurea*.

Mr. WARNER proposed, and Mr. WEAVER seconded, a hearty vote of thanks to Mr. Phillips, which was unanimously carried.

ABERDEEN PHARMACEUTICAL ASSOCIATION.

A meeting of chemists of the North-East of Scotland was held in Gordon's College, Aberdeen, on May 2, under the auspices of the Aberdeen Pharmaceutical Association and the East Aberdeenshire Chemists' Association. The chair was taken by Mr. ANDREW CRAIG, who, after a few preliminary remarks, called upon

Mr. J. F. TOCHER to explain his

SCHEME OF PHARMACEUTICAL EDUCATION.

Mr. TOCHER said he proposed simply to emphasise the salient features of his scheme, but he was prepared to answer queries on doubtful or debatable points to the best of his ability. He then proceeded to draw the distinction between training and mere preparation for examination, and said it was possible to conceive of a well-trained pharmacist with no legal title to the name, as well as of a qualified pharmacist with a most indifferent training. This was what his scheme proposed to remedy. Its first object was to introduce pharmaceutics as a separate subject, taught by a recognised university lecturer, at the same time ensuring that the other subjects necessary for the pharmacists would be available in full at the universities. He thought it was pretty certain that the universities would agree to this part of the scheme, and the united efforts of the universities and pharmacists ought to secure the necessary funds for the lectureships and equipment. The second part of the scheme, as they knew, was the proposal to institute a science degree open to qualified pharmacists. There had been some discussion on this, mostly of a very favourable character, and Mr. Tocher acknowledged that any objections advanced had been of a straightforward and temperate nature. He was sure events would show that any fears the few objectors might cherish as to diminishing the prestige of the Society were baseless, and that instead it would gain in status and in power. The proposed science degree in pharmacy was to be on similar lines to the other science degrees. It was simply the pure science degree with the subject of pharmaceutics tacked on. The preliminary examination for entrance into the curriculum was recognised by the Pharmaceutical Society as proof of sufficient elementary education. An intending graduate could therefore take the qualifying examination after taking a sufficient number of courses and prior to standing the final science examination. In fact, one of the conditions suggested to the university authorities was that the qualification for entrance into the curriculum should include not only the preliminary science examination, but also the qualifying one, although a special relaxation might be made with regard to the latter, permitting it to be taken during the curriculum. It would be no breach of confidence to state that some of the individual university authorities might favour accepting proof of qualification from any British dominion or colony, while others might suggest that the legal qualification and the academic degree should remain distinct. These were points which would be discussed and thrashed out when the matter came up before them officially. What they as pharmacists had to do at the present juncture was to decide whether the idea of providing a uniform and systematic training at the universities for pharmaceutical students working to qualify, under the Pharmacy Acts, as chemists and druggists, whether this idea was a good practical one, or whether it would injure pharmacy. They had also to decide whether there were any reasonable grounds for asking the universities to institute an academic degree, which would provide an honours pass into pharmacy to the flower of the craft. The university training was to be meantime a purely voluntary matter for the Minor student, and certainly the degree would always be so.

Discussion.

The **Chairman** said that Mr. Tocher had himself admitted that the Minor qualification was sufficient for the pharmacist, but he proposed to educate him still further. The public would not appreciate the degree; they did not at present appreciate the Major qualification. Probably half a dozen gentlemen would go in for a degree annually, and were they to have this upheaval in their educational system for the sake of such a small number? They must also look to future contingencies, and what guarantee had they that at some future date the Pharmaceutical Society might not accept the B.Sc. degree in lieu of the ordinary examination? It would be equal to making every pharmaceutical student attend a university, and thereby bring about a compulsory university curriculum for every student. Apart from that, he did not think the average chemist's apprentice was in a position to attend these lectures for the necessary length of time. The fees were only one thing, but the young men had to feed and clothe themselves. It would be all right if the Carnegie Trust kept the students during the time they were attending the lectures. He had seen it reported that Lord Elgin had stated that no one could participate in the benefits of the Carnegie Trust unless he intended to take a degree, and this would of course exclude pharmaceutical students. He had no wish to be discourteous to Mr. Tocher, but he was looking at the matter from a commercial and not an educational standpoint.

Several questions having been asked and satisfactorily answered by Mr. **Tocher**,

Mr. **Giles** moved the following resolution:—

"That this meeting of the chemists of the north-east of Scotland, having heard Mr. Tocher explain his scheme of pharmaceutical education, approves of the principles of it, providing, as it does, a university training for students working towards the qualifying examination, and the institution of a degree in pharmacy constituting a voluntary and honours course."

He said: Though it is difficult in the condition in which our craft is placed at present and these hard times generally to get enthusiastic over anything, yet I heartily approve of this scheme, and believe it to be the best solution of the education problem that could be brought forward at the present time. I believe this scheme will do more to elevate the status of the chemist than all that has been done for the last sixty years. The chemist of the present day is by his acquirements practically a professional man. He is an educated man and a man of scientific attainments before he can pass the qualifying examination. But the education and the scientific attainments count for little in the eyes of the public because they are not stamped with the hallmark of the university. The public recognise a professionally educated man only when he comes through the portals of the university. I think if this scheme were established it would give the pharmacist a position which he has not hitherto attained, and I feel that if the claim were put forward concurrently with this scheme to reserve to the pharmacist the sole right to dispense medicines and deal in poisonous drugs it would be very difficult, having due regard to the interests of the public, for it to be refused. In the case of the doctor and the lawyer, they have reserved to them the sole right to practise the profession for which they have qualified, and I think we are entitled to claim the same privilege for the chemist. Of course, there could be no objection to a doctor or anyone else who desires to do so entering the ranks of pharmacy, but it is surely right that all who undertake to dispense medicines should go through the same training and obtain the same qualification. If a chemist wishes to practise medicine he must qualify as a doctor, and if a doctor wishes to dispense medicine he surely ought to qualify as a chemist. The further question as to whether the man who prescribes the medicine ought also to dispense it has been raised, and is, I think, worthy of consideration. It has all along been a great hindrance to the influence and usefulness of the Pharmaceutical Society that, while it had the absolute right to examine, it only partly educated, it being only the favoured few who are in a position to take advantage of the Society's educational establishment at Bloomsbury Square. There is one point which I should like specially to put to Mr. Tocher, and it is this, that in arranging the details it should be clearly set forth that under this scheme pharmacists would be the teachers of the technical subjects, and also that only pharmacists be appointed examiners. Fully-trained pharmacists have the best knowledge of what is necessary to be taught to pharmaceutical students, and they should have the conducting of the examinations, because they know best how to test the candidate's knowledge and find out if he be properly equipped for the practice of his profession as a pharmacist.

Mr. **Charles Simpson** seconded the motion, and

Mr. **James Paterson** said he had always approved of a university course in pharmacy, but he doubted if the adoption of such a course would be practicable. He thought if the scheme were to be gone into and prove a benefit to the future pharmacist, the Society should accept passes in several of the subjects of the universities. This would relieve the student considerably. The want of evening classes at the university was a great drawback, for the ordinary apprentice chemist would not have time to devote himself to the university course. One result of this scheme might, he thought, be to induce Parliament to confine the dispensing both of medicines and poisons entirely to pharmacists.

Mr. **John Johnston** moved a hearty vote of thanks to Mr. Tocher. He was perfectly sure Mr. Tocher would see his scheme carried out: it was the best one that had been brought before the chemists.

The resolution having been unanimously adopted,

Mr. **Tocher**, in reply, said he was quite aware that his scheme bristled with difficulties, but he hoped these would be settled one by one. He would wish to point out that it was necessary for the pharmaceutical student at present to attend day classes. As far as the execution of the scheme was concerned, he had only to say that, as soon as possible, the Committee would meet and formulate a definite scheme, which would be submitted to the universities. It was also proposed to memorialise the Carnegie Trust for funds for the equipment of a lectureship. He was perfectly aware that it would be a long time before the scheme was carried out, but he was hopeful that they would live to see it adopted. His chief object in formulating his scheme had been, to put it shortly, to raise the status of the profession.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

COLORATION OF CARBOLIC ACID. F. T. Gordon describes experiments which seem to confirm the view that the cause of the reddening of carbolic acid is atmospheric ozone, or hydrogen peroxide formed during the slow oxidation of iron in the presence of air and moisture, acting in the presence of iron derived from the glass or other vessels in which the phenol is kept. It was found that carbolic acid free from iron gave a marked reaction for that metal and acquired a deep red colour, after being kept in green glass bottles for six months. Comparative experiments were then conducted with iron-free and white carbolic acid. If kept for two months in a tightly corked green glass bottle coated inside with paraffin, it remained white, but the same acid, kept in an uncoated and uncorked bottle, acquired a light red colour in the same time. In an iron-free glass bottle, 5 C.c. of the acid became red three days after the addition of two drops of ferrous sulphate solution, while another sample was reddened in a few hours on adding five drops of hydrogen peroxide solution in the presence of ferrous sulphate. An iron-free acid in a paraffin-coated glass bottle remained white on adding hydrogen peroxide solution, but it began to turn red ten days after the further addition of a small piece of iron wire. It is recommended that, in order to prevent the reddening of carbolic acid, it must be free from iron, and must be kept in iron-free containers (bottles coated thickly inside with paraffin are very good), kept tightly corked. It is further stated that exposure to light seems to bleach reddened crystals, and that if red crystals are melted and the first crystallisation separated this will often give a white acid.—*Merck's Report*, **11**, 195.

PROPIONYL IN NITROGEN BROMIDES. F. D. Chattaway states that propionanilide and the bromopropionanilides readily react with hypobromous acid, the imino-hydrogen being replaced by bromine, a hypobromite being probably formed as an intermediate product. The action is a reversible one, and when nitrogen bromides are placed in water the opposite change takes place until a position of equilibrium is reached. Except in colour, these nitrogen bromides closely resemble the corresponding nitrogen chlorides. All show the characteristic behaviour of the nitrogen halogen linkage, and readily react with hydriodic acid, sulphurous acid, hydrogen sulphide, alcohol, and potassium cyanide. When an unsubstituted or partially substituted phenyl residue is attached to the nitrogen, they very readily undergo isomeric change. No interchange between bromine attached to the nitrogen and hydrogen in the ortho-position in an unsubstituted nucleus has been observed, and apparently the halogen cannot pass from the nitrogen to a meta-position. All nitrogen bromides, when treated with an excess of hydrobromic acid, are decomposed, bromine being liberated and the corresponding anilide re-formed. On the other hand, when an anilide is treated with an excess of bromine, a nitrogen bromide and hydrobromic acid are produced. A large excess of hydrobromic acid or the continuous removal of the free bromine causes the anilide to be reformed, whilst the addition of a salt of a weaker acid which can remove the hydrobromic acid causes the action to proceed in the opposite direction and a nitrogen bromide is produced. The reversible nature of this reaction is most clearly seen when the nucleus is already fully substituted, as otherwise isomeric change and substitution into the ring may take place.—*Proc. Chem. Soc.*, **18**, 113.

CHEMISTRY OF ARGEMONE MEXICANA. J. O. Schlotterbeck has definitely settled the doubtful point as to the existence or not of morphine in *Argemone mexicana* (N.O. Papaveraceæ). He finds that the alkaloid is not present in the plant. It contains berberine and protopine, the latter alkaloid being identical with the so-called argemonine of Peckolt. Potassium nitrate is present in the ash of the plant in notable quantity.—*Journ. Amer. Chem. Soc.*, **24**, 242.

ELECTROLYTIC DISSOCIATION. Professor Kahlenberg finds that benzene solutions of chlorides, such as HCl, $SnCl_4$, PCl_3, $AsCl_3$, and $SiCl_3$, precipitate cupric chloride from a benzene solution of copper oleate. There is thus a reaction precisely analogous to the precipitation of silver chloride from silver nitrate solutions by means of a soluble chloride, although in this case both the reacting solutions are excellent insulators. The benzene copper and the benzene chloride solutions are no better conductors than benzene itself, nor is there any increase of conductivity at the moment of precipitation. Elaborate precautions were taken in all the experiments to exclude any trace of moisture. In addition, freezing and boiling-point measurements were made on the copper oleate solution, as well as the conductivity tests, which showed that there was no electrolytic dissociation. The author concludes that, instantaneous reaction in insulating solutions having been thus demonstrated, similar reactions in aqueous solutions cannot be explained on the ionic hypothesis without further proof.—*Journ. Phys. Chem.*, through *Nature*, **66**, 38.

PREPARATION OF PAPAIN. Francis Watts describes the preparation of crude papain from the milk or juice of the papaw tree, *Carica papaya*. The juice is procured by making a scratch or shallow incision in the skin of the fruit of the papaw while in a green condition, with a bone or wooden knife, like a paper-knife. It is essential that no iron knife, or iron utensils, should be brought into contact with the milk, or it will be blackened. The milky fluid rapidly exudes and may be caught in a cup held beneath the fruit. After a time the flow diminishes and the liquid coagulates in the neighbourhood of the incision; this is carefully removed by means of the bone or wooden knife and placed in the cup with the milk already collected. The fruit is not removed from the tree and it may be subjected to the operation of tapping several times at intervals of two or three days. After collection the juice soon becomes coagulated and should then be in the form of a snow-white curd, possessing a somewhat pungent, but not putrid, smell. It speedily decomposes if not rapidly dried, and, when decomposing, emits a most unpleasant odour. It is necessary therefore that drying should be effected as speedily as possible. When considerable quantities are being prepared, the collection of the juice or milk should be undertaken in the early morning and the drying should begin before midday. This ensures that by evening the material is in a sufficiently dry condition to keep without deterioration until the following morning, when the drying can be completed. The drying may be effected in several ways. In dry, hot weather the coagulated milk may be placed in thin layers on sheets of glass and exposed to the sun. This, however, is rarely satisfactory on a large scale, and it is best to adopt some form of drying apparatus. Drying is well effected by spreading the coagulated milk on drying frames made by stretching brown linen on light wooden frames, somewhat like those used for framing school slates; these may be of any suitable size to fit the drying apparatus employed. It is important that the temperature at which drying is effected

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shall be as low as possible. Any overheating destroys the active principle, so that a carelessly prepared product may be useless. In practice, the temperature is kept as low as is consistent with getting the substance dried before decomposition sets in; if this can be done without the temperature of the tray being raised above 100° Fahrenheit so much the better. As the substance becomes dry it shrinks considerably in bulk. The contents of several trays may now be emptied into one and the drying continued. The trays emptied are ready to receive another day's supply of fresh material. Drying must be continued until the substance is crisp, and in such a condition that it can be reduced to a fine powder without any difficulty being experienced from stickiness. The dried material should be ground to a fine powder when the resulting product should be a white or cream-coloured powder with a characteristic, but not putrid, smell. The powder should be packed in tins or bottles, and carefully preserved from contact with the air. Grinding is easily effected in a mill of the type commonly employed for grinding coffee; when grinding it is desirable to have the papain slightly warmed.—*Agricultural News*, **1**, 4.

CLAUSENA ANISATA. According to Dr. Engler (*Notizbl. Bot. Gart., Berlin*, **23**, p. 64) the leaves of the var. *mollis* of this species are used by the natives of Usambara as a remedy for fever. The method of using it is to boil the leaves in water and inhale the steam. The plant belongs to the Rutaceæ, and apparently possesses similar properties to *Zanthoxylon* and *Pilocarpus* in a lesser degree.

FILLING CAPSULES. A. B. Burrows (*Bull. Pharm.*, **16**, 15) recommends that the following process be adopted for filling gelatin capsules with powders:—First moisten the whole amount of powder slightly with water or glycerin to facilitate compression, and, after applying the body of the capsule successively upon the powder until filled, carefully weigh each finished capsule, taking out or adding more powder as required. The powder on the slab should be pressed down flat with considerable pressure by the spatula from time to time as the filling progresses. By practice you can estimate to a small fraction of a grain the capacity of the various sizes of capsules for different substances. By this method it is possible to compress at least 33⅓ per cent. more material in a capsule than the estimated capacity as given on the boxes. The advantages of this simple method are threefold and self-apparent—namely, cleanliness, no part of the powder coming in contact with the fingers; compressibility, a smaller capsule being presented than would otherwise be required; and accuracy, each capsule being weighed, thereby acting as a check, preventing and detecting possible errors in dispensing. Hostelley (*Druggists' Circular*) describes an ingenious contrivance for facilitating the dropping of liquids into gelatin capsules. Two sections of thin board, about five inches by ten, are secured face to face by a strip of wood at either extremity, with a space of about one-fourth of an inch between the boards. Through one of the latter holes of varying sizes are bored to suit the diameters of the more frequently used capsules. When capsules are to be filled with a liquid, the apparatus is laid on the counter, perforations up, a thin strip of board is inserted in the space between the two sections, the capsules are set in the pockets made to receive them and the liquids dropped into them. If, through the dampness of a capsule or the error of an unsteady hand, one of them is difficult to remove, it is let alone until its fellows have all been lifted from their beds, when it is gently loosened and raised by means of the loose strip of board between the upper and lower slab on which the capsules rest.

GLYCOSAL. Under this name, the glycerin ester of monosalicylic acid has been introduced as a substitute for other salicylates. It occurs as a white crystalline powder, soluble in 100 parts of cold water. It is stated to be better tolerated than salicylic acid and its salts, although it possesses the full antiseptic and antirheumatic properties of the former.—*L'Union Pharm.*, **43**, 156.

SPOONFUL DOSES. M. I. Wilbert is of opinion that it will not be easy to supplant spoons as medicine measures, but suggests that some effort should be made to secure greater accuracy and uniformity in the quantities that are likely to be administered. He thinks the adoption of a descriptive definition, indicating the approximate amount intended by the term spoonful may secure the desired results. The quantities adopted should fit in well with the notation used in the metric system of weights and measures, while conforming as nearly as possible to the actual capacities of the spoons they are intended to represent. The equivalents, 5, 10, and 15 C.c., are said to correspond very nearly with the actual capacities of existing tea, dessert, and tablespoons, but 5, 10, and 20 C.c. are the approximate equivalents preferred by some authorities. —*Am. Journ. Pharm.*, **74**, 218.

A NEW SILICON HYDRIDE. H. Moissan and S. Smiles announce the isolation of a new compound of silicon and hydrogen, Si_2H_6. It is obtained by the action of dilute HCl on pure magnesium silicide, and passing the gas generated through a tube surrounded by liquid air; when the temperature falls to between −180° C. and −200° C. a solid body is formed, and the issuing gas loses its property of being spontaneously inflammable in atmospheric air, being, in fact, pure hydrogen. If the solid body is now submitted to fractional distillation, as the temperature rises it boils and gives off gaseous siliciuretted hydrogen, and leaves, at the temperature of the laboratory, a liquid which is the new hydride, Si_2H_6. This body boils at +52° C.; at −138° C. it crystallises and solidifies. On contact with the air it spontaneously ignites, burning with a very bright flame. It also imparts to hydrogen the property of becoming spontaneously inflammable, even when present in that gas in small quantities. It also burns in chlorine. Friedel and Ladenburg have shown that pure SiH_4 does not ignite spontaneously at ordinary temperatures, so that the burning of siliciuretted hydrogen in the air must be due to the presence of this body, just as a little liquid PH_2 causes the spontaneous ignition of much PH_3. The gaseous silicide obtained in the fractionation is being investigated.—*Comptes rend.*, **134**, 569.

MARKINGS ON DIATOMS. G. Marpmann finds that by holding a slide thickly spread with any species of the genus *Pleurosigma* in full sunshine, it is easy to trace the diffraction colours through the various tints of the spectrum from violet to red and even to follow the second diffraction spectrum down to the green. If a slide of *Pleurosigma angulatum* or *quadratum* be held up in a bright light and a few of the much more coarsely marked *P. balticum* happen to be mixed with the other diatoms, the latter forms, by the different colours which they exhibit, are easily discernible to the naked eye. W. B. Stokes concludes that the minute perforations in *Pleurosigma formosum* are silted up with silica, and J. Rheinberg has succeeded, by placing a disc of a certain form above the objective of his microscope, in obtaining two images of the same diatom in complementary colours, one being a dioptric image and the other a diffraction image of the first order.—*Journ. Roy. Micros. Soc.*, through *Nature*, **66**, 39.

VEGETABLE POWDERS AND THEIR DIAGNOSTIC CHARACTERS.

BY PROFESSOR HENRY G. GREENISH AND EUGÈNE COLLIN.

Section 4.—Flowers and Flowering Tops.

The anatomical characters presented by powdered flowers and flowering tops will depend in the first place upon the number of different organs that are present in the drug. If the latter consists simply of petals the chief diagnostic characters will be found in the shape of the stomata, and in the papillæ which are generally met with on the surface of these delicate organs. Some petals are furnished with simple and glandular hairs in which case these, of course, may be utilised in establishing the identity of the powder. By such means as these the presence of calendula florets in powdered saffron may be detected; the former bear pluriserial hairs near the base of the corolla, and these are easily recognised in the powdered drug. The presence of secretory ducts may also sometimes be of service in determining adulteration, as for instance that of saffron with safflower, for the florets of the latter contain oleo-resin ducts that can be detected in the powdered drug.

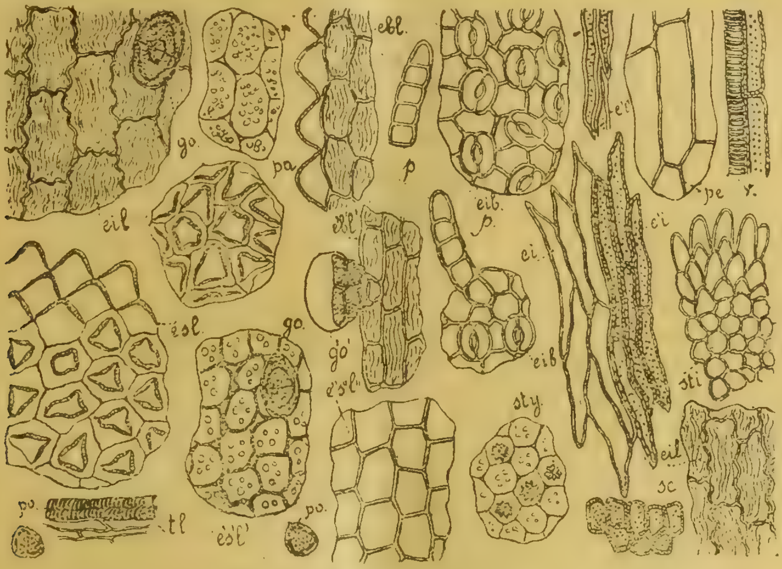

FIG. 50.—CHAMOMILE FLOWERS.

POWDERED CHAMOMILE FLOWERS.—*ebl*, epidermis of tube of ligulate floret; *e'b'l*, the same with gland in profile; *ei*, epidermis of involucral bract (margin); *e'i*, the same (median portion); *eib*, the same (near base); *eil*, lower epidermis of ligula; *esl*, upper epidermis of ligula (near the apex); *e's'l*, the same (middle); *e"s"l*, the same (near the base); *go*, oil gland (surface view); *g'o'*, oil gland (in profile); *p*, pluricellular hair; *pa*, parenchyma from corolla; *pe*, epidermis of peduncle; *po*, pollen grains; *sc*, sclerenchymatous cells from receptacle; *sti*, débris of stigma with papillæ; *sty*, débris of style; *v*, vessels, etc., from peduncle.

Pollen grains are also often present on the corolla of the flower, and their presence, shape and size may afford information that should not be under-estimated. The pollen grains of the saffron-crocus are of considerable size and nearly smooth, whilst those of composite plants are usually furnished with numerous spiny projections. An abundance of pollen grains in powdered cousso indicates the presence of the staminate inflorescence which is inactive, and is excluded from official use.

If all the organs of which the flower is composed are present in the powder then the number of elements that may be made available for its determination is largely increased. In addition to the pollen grains the cellular tissue of the anthers will be present. The calyx almost always contains sclerenchymatous elements, and the receptacle often exhibits structural peculiarities that are of distinct value, as is the case with insect flowers. The powders of aromatic flowers and flowering tops are generally characterised by the presence of particular oil-glands which render them comparatively easy to recognise.

In addition to the flower itself flowering tops usually contain bracts, peduncles, and portions of the flowering stem. Such drugs exhibit when powdered a distinct increase in the débris of fibro-vascular bundles, whilst in some cases particular sclerenchymatous cells may be introduced, as such elements are frequently present in considerable number in the stem and its branches. The presence of palisade tissue generally indicates the presence of leaves or leafy organs.

CHAMOMILE FLOWERS.

The double or nearly double flower-heads of cultivated plants of *Anthemis nobilis*, Linn. (N.O. Compositæ).

The florets of the ray and the majority of those of the disc are white and furnished with ligulate corollas, which are lanceolate and terminate in a truncate three-toothed apex. In the centre there are usually a few inconspicuous yellow tubular florets to be found. The florets spring from the axils of lanceolate, obtuse paleæ inserted upon a conical receptacle. The paleæ are scarious at the margin, and often fringed near the apex.

The epidermal cells of the ligulate corollas vary in shape and appearance according to their position on the ligula. Those on the tubular part near the base are elongated and slightly striated; at this point the epidermis bears numerous pluricellular glands possessing the structure common to the oil glands of plants belonging to the order Compositæ (*go*, *g'o'*). Towards the apex the epidermis of the upper surface is destitute of glands, but is provided with a number of papillæ, and these produce considerable variation in its aspect in different positions; the lower epidermis is composed of sinuate, striated cells, amongst which numerous stomata, glands, and simple pluricellular hairs are to be found.

The epidermal cells of the involucral bracts vary according to their position on the bract. At the apex and on the margins they are long and fusiform with but slightly thickened walls; near the median line and over the fibro-vascular bundles they are elongated and provided with thickened pitted walls; near the base they are polygonal and isodiametric. Towards the base the epidermis also bears numerous stomata, hairs and glands. In the receptacle at the point where the bracts are inserted there are sclerenchymatous cells.

The style is composed of small cells rich in rosette-crystals of calcium oxalate; the stigmas are provided with characteristic papillæ.

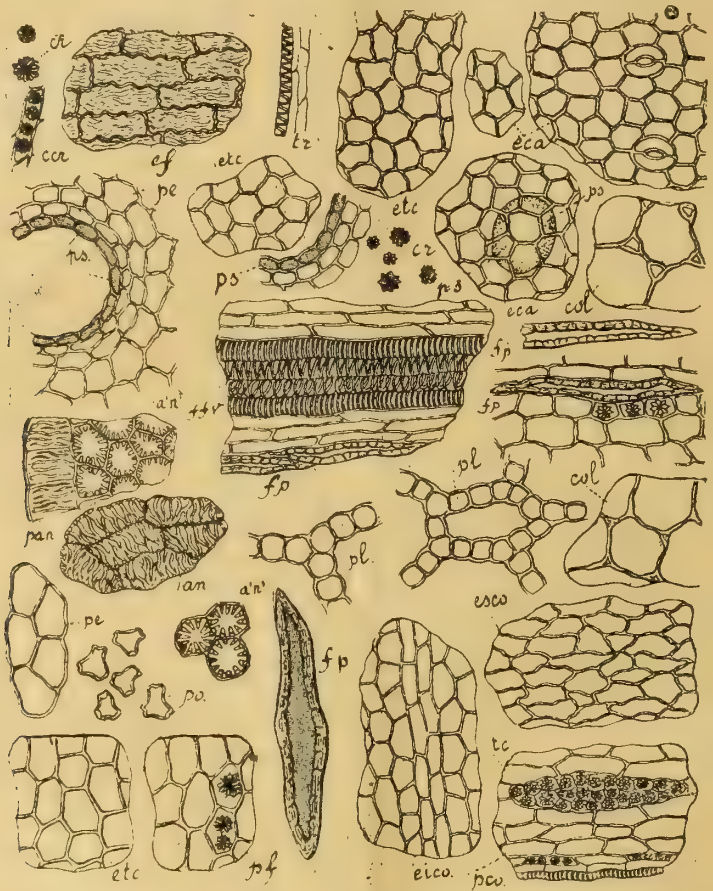

Fig. 51.—Cloves.

Powdered Cloves.—*an*, *a'n'*, cells from the anthers, surface view and in profile; *col*, collenchymatous layer; *ccr*, crystal cells; *cr*, rosette crystals of calcium oxalate; *eca*, epidermis of calyx-teeth; *ef*, epidermis of filament; *eico*, lower epidermis of corolla; *esco*, upper epidermis of corolla; *etc*, epidermis of lower portion of clove; *fp*, fibres from the pericycle; *pco*, parenchyma of the corolla with numerous calcium oxalate crystals; *pe*, cells of outer layers of parenchyma; *pl*, cells of lacunous portion of parenchyma; *pf*, parenchymatous cells from filament; *po*, pollen grains; *ps*, oil-glands; *tc*, crystal cells; *tr*, vessels from calyx-teeth and corolla.

The diagnostic characters of chamomile flowers are:—(*a*) *the cells of the lower epidermis of the ligulate corolla; they have wavy walls and striated cuticle;* (*b*) *the papillose upper epidermis of the same;* (*c*) *the characteristic oil glands;* (*d*) *the elongated cells of the scarious margins of the bracts.*

Cloves.

The dried flower-buds of *Eugenia caryophyllata*, Thunb. (N.O. Myrtaceæ).

Each clove consists of a somewhat quadrangular stem-like portion slightly contracted at the base; this part is sometimes interpreted as a calyx-tube, sometimes as the solid lower part of the ovary. It is crowned by four thick, divergent, suboval calyx-teeth in the centre of which there is a small rounded body consisting of four imbricated petals enclosing the dried stamens and style.

The transverse section of the lower part of the stem-like portion exhibits the following characters:—The epidermis is composed of polygonal cells covered with a rather thick cuticle, and provided with stomata. Below the epidermis is parenchymatous tissue well differentiated into three layers, viz., an outer one with radially elongated cells, and numerous internal oil-glands, a middle, collenchymatous layer traversed by numerous fibro-vascular bundles in which thick sclerenchymatous fibres are conspicuous elements, and an inner, lacunous layer. In the centre there is a moderately large fibro-vascular bundle.

Both the teeth of the calyx and of the petals consist chiefly of parenchymatous tissue in which there are numerous oil-glands.

The anthers are composed of small cells with pitted walls, and larger cells with spiral thickenings.

The powder also contains numerous pollen grains as well as pericyclic fibres derived from the bundles in the lower part of the clove.

Powdered cloves possess no well-marked diagnostic characters; the following may, however, be mentioned:—(a) *epidermis of lower part of ovary, with thick cuticle;* (b) *epidermis of calyx-teeth and corolla;* (c) *fragments of the oil-glands;* (d) *parenchyma of the corolla with numerous rosettes of calcium oxalate. Powdered cloves should not contain sclerenchymatous cells (clove stalks) or starch (mother-cloves).*

(*To be continued.*)

NOTES ON MEDICINAL PLANTS CULTIVATED IN GREAT BRITAIN.*

BY F. RANSOM, F.C.S.

(*Concluded from page* 151.)

Elaterium.—One of the most interesting of the medicinal plants cultivated in this country is the squirting cucumber, *Ecballium elaterium.* The generic name is derived from the Greek word "ecballo," to cast out, and refers to the well-known characteristic of the fruit which dehisces with violence on ripening and thus distributes the seeds, which are ejected to a considerable distance. The specific name is also derived from a Greek word "elaterios," meaning driving away. This is generally considered to refer to the strong purgative action of the drug. The plant was known to the ancients, and a process for preparing elaterium (elaterion) was described by Dioscorides in the second century which differs but little from that given in the last edition of the British Pharmacopœia. The fruit is gathered by hand during the latter part of the summer, the time chosen for picking being when the fruit is nearly ripe. If left too late much of the juice is lost by the spontaneous dehiscence already referred to; while if gathered too early in the season very little of the deposit known as elaterium is obtained. English elaterium, when freshly made, is of a pale green colour, and in order to preserve this appearance it should be kept from the light or it will soon become bleached. Elaterin, the active principle, should be present to the extent of about 25 per cent., and I have found as much as 28 per cent. in the freshly prepared drug. Elaterium gradually deteriorates on keeping, but it may continue to answer the official requirement of 20 to 25 per cent. elaterin for several years. The squirting cucumber is one of the few plants that does not appear to benefit by a rotation of crops; a field in which it now grows luxuriantly has produced a crop annually for over thirty years. Fashion, which exercises so large an influence in the employment of drugs, has of late neglected elaterium for more recently introduced purgatives, and the demand at the present time appears to be much less than it was fifteen or twenty years ago.

Lavender or *Lavandula* derives its name from the Latin, lavo, to wash. This may refer to the practice of laying lavender with freshly washed linen, or more probably to the fact that it has long been used as a perfume for baths. The plant is indigenous to the hilly districts bordering on the western part of the Mediterranean, both in Europe and Africa. *Lavandula vera* is found mostly at a considerable altitude, while the *L. spica*, which yields the so-called spike oil, grows at a lower level. It was introduced into England in the sixteenth century, and has since then been a favourite garden plant. Attempts have been made to cultivate it for commercial purposes in various parts of the country, but it is only within a radius of about fifty miles from London that much success has been attained. To succeed well it requires a sunny aspect on well-drained land, with careful cultivation, and a mild winter with a warm and dry summer are the most favourable climatic conditions. Plants grown in the North of England or in Scotland, although they may thrive in gardens, do not possess the same powerful aroma as those cultivated in the home counties. This is probably on account of the higher rainfall and the shorter period of warm weather, during which the development of the oil takes place. Lavender is generally propagated by cuttings or sub-division of the younger plants, and upon the care exercised upon them during the earlier stage of growth much of the success depends. During the first summer after planting but little flower is produced, and it is not until the third year that the plants arrive at perfection. In their third or fourth seasons they usually produce their maximum amount of flower, after which many of the plants die off annually. Lavender is very subject to a fungoid disease, which attacks the roots and gradually ascends the stem, and that now in cultivation does not appear to possess the same vitality as formerly. The harvest usually commences about the second week in August, but varies much according to the season. The earliest that I have on record in connection with our farm was in 1868, when it commenced on July 17. The latest appears to be 1894, when it was not begun until September 3. The variations in the price of English oil of lavender may occasion some surprise to the retail pharmacist, but for an article for which there is a comparatively small demand and consequently a limited supply the variations in the season and consequent yield of oil are sufficient explanation. One of the worst years on record is 1881, when the thermometer at Hitchin fell to 5° F. in the shade on January 22. The result was that a large proportion of the plants were killed, and consequently the amount of oil distilled during the following summer was very small. The value of the oil advanced accordingly, and during the following year the scarcity was so severe that the wholesale price was 200s. per lb. and upwards, and but little could be obtained, even at this figure. An almost equally disastrous season was 1895, again following an abnormally cold winter, when the thermometer fell to 0° F., on February 22. It is noteworthy that these two disastrous seasons followed the two winters in which the lowest temperatures on record in our district during recent years were registered. English oil of lavender has often been a favourite investment for the speculative pharmacist, and when bought judiciously and held consistently it has often proved a profitable business. Unlike many articles, an abnormally low price does not at all indicate an inferior quality; the reverse is, in fact, more often the case. A warm dry summer not only promotes a large yield but the quality of the oil is also, as a rule, exceptionally good, the favourable season having promoted a strong and healthy plant. The question is often asked as to the yield of oil of lavender from an acre of ground. I notice that one authority estimates it at from 15 to 30 lbs. I think that 30 lb. would be a very exceptional result, and could only be obtained in a very favourable season, and from that portion of the crop which happened to be at its prime. If the whole of the land under cultivation is taken into account, including that devoted to the cuttings and the two first years' growth, I should say that 12 lb. per acre would more approximate to the average yield. The yield of oil per still varies very much according to the season, and the actual weather at the time of harvest. There is much more flower on the stalk in some years than in others, and during some seasons the flowers on the plant develop evenly, while in others many of the heads are immature when others are ready for cutting. The following table shows the average yield of oil from a still of about 750 gallons, especially during the last twenty years.

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* Read before the Chemists' Assistants' Association, on Thursday, February 13, 1902.

Comparative Yield of Oil of Lavender During the Last Twenty Years.

Year.	lbs.	oz.	Year.	lbs.	oz.
1882	7	5	1892	5	15½
1883	6	14	1893	11	6½
1884	10	6½	1894	6	5½
1885	9	4½	1895	9	2
1886	9	15½	1896	11	6
1887	12	11	1897	10	0½
1888	6	9	1898	8	1
1889	7	8	1899	11	7
1890	8	1	1900	8	7
1891	6	6½	1901	12	0½

From the above it will be seen that 1887 comes first with 12 lb. 11 oz.; while last year is a good second with 12 lb. 0½ oz. Not only was 1887 unusually prolific, but the quality of the oil was exceptionally fine. It is not until four or five years after distillation that the oil arrives at maturity, and it is therefore impossible to speak decidedly of last year's produce; as far, however, as can at present be judged it is decidedly above the average in quality. The low price which has been ruling during the last few months is partly the result of the large yield and is also probably due to some extent to an increased area of cultivation. A few years ago the production of lavender received some attention in the daily press, and some well-intentioned editors recommended it to farmers as likely to prove a profitable crop. My firm has received offers of lavender from various parts of the country during the last year or two, but as it is essential that distillation should take place very speedily after cutting, we have been unable to relieve these growers of their produce. Much has doubtless found its way to Covent Garden, but even there, I believe, the prices obtained have been hardly remunerative to the growers, especially if the harvest happens to be late. It is probable that some farmers have now discovered that cereals are not the only crops upon which money may be lost. The difference in value, in a perfumer's estimation, between English and foreign oils of lavender is difficult to explain from a chemical standpoint. The best French oil is obtained from the same species, *Lavandula vera*, and I believe that the flowers are collected and distilled with care. The chief differences in the composition are the smaller ester content and the larger percentage of cineol in the home product. A French oil presenting these characters would be considered to be of inferior quality and rightly regarded with suspicion. A few years ago when much had been recently discovered concerning the constitution of these oils, it was predicted that English lavender oil would soon become a thing of the past and only of historical interest. It appears, however, that there remain subtle constituents still to be revealed, and I believe that even the most advanced German chemists have not yet placed on the market a synthetic product which can claim to be a substitute for English oil of lavender It is often found that the freshly distilled oil is below the specific gravity (0·885) required by the British Pharmacopœia, and it is a question whether a slightly lower figure should not be substituted. On keeping, the oil gradually becomes heavier, and it is possible that it is intended to exclude the lighter oils of some seasons until they shall become fully matured by age. If so, it should be understood that an oil which fails to answer the official tests is not necessarily adulterated, but may be immature.

Rosemary is not cultivated to any large extent in this country, although it has been for centuries a common garden shrub. It is a native of the countries bordering on the Mediterranean, and as its name indicates (*Ros*, the dew; *mare*, the sea), it is most plentiful in districts adjacent to the sea. In this country the climate is not such as to promote vigorous growth, and a sharp winter often destroys a large proportion of the plants. The oil distilled in this country from home-grown rosemary is, however, very superior to that imported from the South, and the difference in commercial value between the British and foreign products is greater than in the case of any other essential oil. This difference may be chiefly due to the care exercised in distillation and the exclusion of all woody material from the still.

Peppermint has been cultivated at or near Mitcham for the last 150 years, and was included in the London Pharmacopœia of 1721. It is now also cultivated in Hertfordshire, Bedfordshire, Cambridgeshire, and Lincolnshire. Two varieties of *Mentha piperita* are indigenous to this country but, so far as I am aware, are not collected in the wild state. The oil distilled from that grown in the more Northern districts possesses a distinct flavour from that produced in the home counties, and although preferred for some purposes is not generally so much esteemed. In Surrey two varieties of peppermint are cultivated, known as the black and the white. The latter variety has a green in place of the purple stem, which distinguishes the ordinary black peppermint. The oil of the white variety commands a higher price on account of its more delicate flavour, but the yield per still is less and the plant is not of such vigorous growth. The peppermint harvest usually follows that of lavender where both are cultivated. The plant is mown with scythes or by machinery as soon as the flower appears. It is frequently left on the ground for some days before distillation, and being thus partially dried economy is effected by getting more of the herb into the still, the loss of oil by evaporation not being appreciable. The quality of the oil depends largely upon the care exercised during the cultivation of the plant. It is of great importance to keep the ground as free as possible from weeds, as if present they are collected and distilled with the peppermint, and a more or less impure oil results. It is not improbable that the superiority of English over all foreign oils is due largely to the greater care that is expended in this direction. Oil of peppermint contains a large number of constituents, of which the most important, from a medicinal point of view, is menthol. The commercial value of the oil is, however, by no means dependent upon the percentage of menthol present, or the price of the Japanese would be much higher than that of English. It is difficult at times even to find an English oil which will answer the characters and tests inserted in the last edition of the Pharmacopœia, which are mainly dependent upon the percentage of menthol present. It is probable, however, that much the larger part of English oil of peppermint is used for the purposes of confectionery, where the delicacy of flavour is of much more importance than the medicinal activity. The season which is suited for lavender is often disastrous for peppermint, a long spell of dry hot weather retarding the growth, and often causing much of the plant to die off. As a consequence of this the season of 1901, which was so favourable for lavender, was totally unsuited for peppermint, and for the first time within recent years the relative value of the two oils has been reversed. Several other plants belonging to the order Labiatæ, such as spearmint and pennyroyal, are cultivated in England, but the distillation of their oils is only carried out to a limited extent.

Poppies are grown for the capsules in various districts in this country. They are an uncertain crop being very dependent upon the weather. A warm dry summer produces capsules of good colour, but poor in size, while a moist season is favourable for a larger fruit, which is often poor in colour. During recent years foreign grown capsules have been imported from the Continent, and this has tended to reduce the cultivation in this country. The poppy, under cultivation, has a strong tendency to variation, the variety which is most esteemed being that with white petals and seeds. The darker seeds produce flowers with purple petals and smaller capsules. These are, therefore, carefully excluded when collecting the seed for sowing. The cultivation of the poppy for the production of opium dates from a very early age, and even in this country it has probably been grown for a longer period than any other medicinal plant.

Rhubarb is another plant which has been in cultivation for medicinal purposes from very early times. It is mentioned in a Chinese herbal written about B.C. 2700, and is repeatedly referred to by classical writers. It appears to have been introduced into this country in A.D. 1535 by Andrew Boorde, a Carthusian monk, but the species is uncertain. *Rheum rhaponticum* was grown from seed by Mr. Hayward, an apothecary, of Banbury, in 1777, and that district still supplies the greater part of English medicinal rhubarb. For his success in this new enterprise a silver medal was awarded to Mr. Hayward by the Society of Arts in 1789, and subsequently a gold medal in 1794. Shortly afterwards *Rheum palmatum* appears to have been introduced, and medals were awarded for its cultivation in other parts of the country. The seeds of *Rheum officinale* were obtained by the late Daniel Hanbury and supplied to Mr. Usher, of Banbury, in 1873, and I believe that this species is still cultivated by his successors. When grown from seed it appears to be very subject to hybridisation, and it is often difficult to recognise the typical species. The roots are collected when three or four years old and then carefully trimmed and dried. For some reason English rhubarb has never been so much esteemed as the root imported from the East, but whether this is due to prejudice or to some actual difference in medicinal properties has not yet been definitely settled. It is probably the only British grown drug which is less valued than the foreign product. An exhaustive chemical investigation of the different varieties might throw some light upon the matter, although it seems certain that rhubarb does not owe its properties to any single constituent.

Liquorice, the product of glycyrrhiza (literally the sweet root), was also known to the classical writers, and from being largely produced in Spain in the middle ages became popularly known as Spanish juice. The root appears to have been grown in Yorkshire for about 300 years, and the town of Pontefract has become intimately connected with its cultivation. The roots are dug up during the winter from plants that are usually three or four years old. The flavour of the English root is undoubtedly superior to the imported article, but growers find it difficult to compete with that which is produced in Southern Europe and parts of Western Asia, where the plant grows abundantly.

Besides those already referred to, several indigenous plants are cultivated on a limited scale; digitalis, conium, and even taraxacum being grown to some extent. As, however, much the greater part of those used are collected from the wild plants, notes on their cultivation would hardly prove of much interest. I have endeavoured to touch only on the more important medicinal plants under cultivation and those with which I have had more personal experience.

LETTERS TO THE EDITOR.

Pharmacopœia Revision.

Mr. Lyon accuses me of having done him an injustice in my remarks in a paper read before the Liverpool Chemists' Association some weeks since, and says that I have no right to misrepresent him. He is perfectly right in this. I have not only no right to do so, but I have certainly no wish to do so, and if I have must express my regret. At the same time, if I have misunderstood him it is partly his own fault. He heads the paragraph to which I referred "Solids by Weight, Liquids by Measure," and goes on to speak of the above as an "unwritten law." Now, it is neither a written nor an unwritten law, and I only know of two facts which have caused the very common misapprehension that exists upon this point. The first is, that the signs for troy oz. and drachm have been always recognised in physicians' prescriptions as applying either to the weight or measure, as the case might be. The other fact which has probably more largely led to this common mistake is that Squire, in a work written for medical men, has always adopted that rule, but in that case the fact is notified, or certainly always was notified, at the top of every page, showing clearly that it was not a recognised law, but simply a convenient method which was approved by the authors of that work and adopted by them. It has never been adopted, as far as I am aware, in any official work. The fact is that so long as we stick to our present system the only rule which the Pharmacopœia should adopt with regard to weighing or measuring is to adopt that method which is most convenient. Now, to follow Mr. Lyon's own table, I should say it was distinctly more convenient to measure the syrup, glycerin, and tincture of orange in making confectio sulphuris. Also that it is very much more convenient to weigh the olive oil when making emp. ammoniac. cum hydrarg., emp. hydrarg., emp. picis, and emp. plumbi. Again, that it is much better to measure the liquid extract of belladonna, which is standardised by measure, in making emp. belladonnæ. In this way I might go through the greater portion of his table and show that the method adopted by the Pharmacopœia is dictated by a consideration for convenience and accuracy. There are, of course, cases such as I mentioned in my paper where the Pharmacopœia adopts a most inconvenient method, but it seems to me most unwise, so long as our present system exists, to attempt to adopt uniformity. With regard to the use of powdered nux vomica, I might certainly accuse Mr. Lyon of having misrepresented me. I never said that I had "never heard of its being used for human beings." What I said was that I never remembered seeing it prescribed for human beings. I never doubted that it was prescribed, and I have no doubt that I have seen it, but so long since that I did not remember such an occasion. As a matter of fact, we have several prescriptions in our books in which it is ordered, but they have never come under my notice within my memory, and the point which I desired to make was that it was so little used that it was most undesirable and unnecessary to standardise it when it is used possibly once for every thousand times that the standardised extract is employed. I might have carried the argument further and said that it was quite clear that those who used it when there was available a standardised extract which they might have used evidently cared very little about standardisation. In most of the prescriptions in our hands it is ordered to be dispensed in cachets, in which the extract could equally well have been employed. The fact is that pharmacy has already got ahead of medicine in the matter of standardising, and although I would be far from wishing to discourage a movement in the direction of uniformity, I should consider it a ridiculous waste of time to standardise such a thing as powdered nux vomica, which is so very little used.

Liverpool, May 13, 1902. A. C. Abraham.

The Acetic Acid Test for Oil of Turpentine.

The transcript of the shorthand writer's note given by Mr. Hill in the last issue of the Journal seems to me to prove that his condensed report in the previous week's issue was inaccurate, and not accurate, as he contends. It is now evident he only meant that solution is sometimes followed by separation, but I maintain that the sentence complained of, having no such qualifying word, could only mean that every sample tried would, in a very short time, separate. This point being now settled, the way is clear for a discussion of the various points raised. Mr. Dunlop's paper was primarily a criticism of Mr. Alcock's suggestion that oil of turpentine should be made a test for glacial acetic acid. My recollection of the discussion is that all the speakers agreed with him that this additional test was quite unnecessary, but that some of them did not agree with his recommendation that the acetic acid test for oil of turpentine be deleted from the Pharmacopœia. It is with regard to the latter point that the present controversy exists, and it hinges mainly on three points: (1) For what period of time should the solution remain clear? (2) Is the present range of temperature too wide? (3) Is equal volumes the proper proportion? Mr. Hill stated that in his opinion "the idea of the Pharmacopœia is that you get a clear permanent solution in equal volumes." The pharmacopœial wording of the test is certainly vague, but if Mr. Hill's interpretation is in this instance correct it opens up a very wide field of controversy with regard to this and other tests. With a strongly acid liquid and a substance susceptible to chemical reaction as oil of turpentine is, I do not think it is reasonable to expect they will remain in contact for a prolonged period of time at a temperature varying from 10° to 21·1° C. without some reaction and the probable formation of new bodies, and of course if this does take place the test would then cease, because the substances in contact would not be glacial acetic acid and oil of turpentine. Mr. McDiarmid's experiments show that at a low temperature the solution may remain clear for at least five days. On reading his letter I took portions of the two oils of turpentine used in my previous experiments, and mixed them with equal volumes of glacial acetic acid. This time, however, instead of using uncovered test glasses and exposing the liquids to direct and indirect sunlight, I used corked vials, filled them nearly to the shoulder, and placed them out of direct sunlight. After four days the solutions are still clear, and there is no appearance of separation. The temperature has varied only slightly, the highest reading being 12·2° C., the lowest 10° C. Mr. Hill claimed that the experiments recorded in my former letter confirmed his assertion that solution is sometimes followed by separation, but I do not consider he was justified in doing so, because (1) the solutions remained unseparated for three hours, in spite of exposure to direct sunlight, which circumstance was bound to accelerate reaction; moreover this part was distinctly beyond the directions of the Pharmacopœia, and was done merely out of curiosity. (2) Three hours cannot be considered "a very short time," when chemical reaction is the question at issue. Let him rather take the above experiments if he wishes to base an argument upon the result, as they were carried out with more regard to a fair interpretation of the Pharmacopœial directions. I purpose carrying out a series of experiments with the view of eliciting information anent the three questions mentioned, and it is most desirable that Mr. Dunlop and others interested should do likewise, so that there may be a comparison of results. It ought to be kept in mind, however, that the test is in the Pharmacopœia for a specific purpose—namely, the detection of resin spirit and petroleum oil.

Edinburgh, May 13, 1902. W. Lyon.

The Society's Finances.

The annual balance sheet of the Pharmaceutical Society, printed in the Journal of Saturday last, is one of the most unsatisfactory issued for a long time, and demands the very serious consideration of every member. After an incorporation of sixty years to be compelled to draw £1,654 from the accumulated funds demonstrates the great error committed in abolishing the Preliminary Examination. Many students paid their fee and passed the Preliminary Examination, then drifted into other spheres of business or profession. The student now will be contented to register and pay his fee prior to the Minor. The first examination being on a par with the Medical or Law, compels parents to consider what advantages there are in having their son educated for a chemist. The advantages are difficult to explain and the disadvantages numerous, including long hours in business, unsatisfactory examinations—*i.e.*, "not being examined in your real business"—and after you have obtained the Minor and established a pharmacy, your neighbour—say a grocer—can convert his business into a limited company as "Socks, Limited, the Greatest Chemists," and in the eyes of the public as much a chemist as the qualified one. One of our most Gilbertian laws is the present unsatisfactory one *re* the limited chemist, and until a common-sense alteration is made in the pharmacy law we shall go plodding blindly along without the support of the majority of qualified chemists. After the remarks of the Government visitor to the London Board, "Until pharmacists themselves agree to require compulsory courses of instruction in at least pharmacy and chemistry, there will continue to be large percentage of failures," now appears an opportune time to press upon the Privy Council and Government the importance of restricting the title "chemist and druggist" to the really qualified person, and until such law is passed our profession or business will continue on an unsatisfactory basis, as the value of our charter of incorporation becomes practically nil when limited companies can usurp the title.

Blackpool, May 13, 1902. J. Sankey.

Division of the Minor Examination.

If I may venture to express my opinion on this subject, it seems to me that the question of division or no division is misleading and secondary, the primary, real, and vital question at issue being whether the examination should be made easier for candidates to pass or not. Easier or not easier, the real question is whether or not there should be a lower standard. My own position, which, I must confess, is more or less taken up from the standpoint of personal interest at stake, is strongly antagonistic to any attempt to allow men to receive their diplomas on less exacting terms than I myself received it. In that I am purely defensive. Having been compelled to expend a given quantity of energy and capital in obtaining a qualification, I naturally object to others being granted the same qualification on less stringent terms. I think it would be most unfair on the part of the authorities to do any such thing unless they are prepared to compensate me for the surplus amount of energy and capital I have expended in attaining to what they would thereby admit to be an unnecessary and more or less unjust and even exorbitant standard of efficiency. Such a course would be equivalent to the Government issuing shares to me at, say, £1 each, and shortly afterwards, without any valid reason, selling the same shares to my neighbour at 10s. or 15s. each.

Complaints of the scarcity of apprentices and of cheap assistants, as well as the opinion that the exams. are too difficult, may be quite natural for the older men who have failed to make headway against the illegitimate competition of stores, or for chemists who habitually work their establishments with less than the bare minimum of qualifications, whose set mode of life makes them incapable of adapting themselves to the altered conditions of the times. An influx of men into the trade at a reduced standard of efficiency would not materially affect those who make such complaints. It would, however, seriously handicap the younger generation, who have obtained their diplomas during the last five or ten years, and who in ten years to come will constitute the backbone of the body pharmaceutical. I would like also to point out that such a course as lowering the standard of a diploma is without precedent, and contrary to all right custom. It is recognised at the schools, universities, and medical colleges that the standard of efficiency must be raised from time to time, and the reason is obvious. Let it be granted that the physician or lawyer of to-day has just the same standard to attain to as his predecessor of thirty years ago in order to get his diploma, and what happens? Why, the man is not fit for his position in the world. His predecessors during their labours have exploited a whole province of knowledge, and if the man of to-day is to be their true successor he must of necessity make his start at a much better point of vantage than was necessary or even possible for them. Further—and on this point I speak as a student among students—it is my firm conviction that the candidates who are rejected time after time at the exams. deserve to be rejected. Who are they? Have we not all seen them? They "just go up to see what the examination is like," and to take the chance of getting through. Naturally, they often fail, revile the examiner, and persuade their friends that the exam. is abnormally hard, or that it is all a matter of luck.

Occasionally an old associate of this class will meet me and call me a lucky dog, fortunate fellow, etc., etc., for having got through so easily. Needless to say, I deny the lucky and fortunate and easy part of the business altogether. I did not go up to the rooms "just to see what it was like." I could not afford the luxury. I simply worked to get through with all my might, and, having satisfied myself that I was about ready, went up and passed. The examiners, both in London and Edinburgh, I found to be perfect gentlemen. They were willing, almost anxious, to coax out of me all the knowledge which the atmosphere of the exam.-room had driven from my mind for the time being; while, with regard to one or two, I felt their sympathy to be a direct and powerful stimulus towards getting through. There must be dozens of young chemists up and down the country who agree with me on this subject, and whose sentiments I am now expressing. They cannot but regard any reduction in the standard of efficiency as a direct betrayal of their vested interests in the concern, and even more likely to injure their status as chemists than that fatal decision of the Supreme Court *re* companies, which we so much deplore. I would call upon all such to resist any attempt at such a betrayal, whether by division of the exam. or otherwise. In my opinion, those who would support such a retrograde movement are blind to their best interests as qualified chemists, and would be unwittingly acting the part of traitors. To take any such course would be to haul down the flag to the enemy, and give a fresh impetus to that illegal competition which is the real cause of this continual wail about the scarcity of assistants, the dearth of apprentices, and the difficulty of the exams.

London, May 12, 1902. William Shadforth.

The division of the qualifying examination seems to be drawing a good deal of attention; but to my mind the Minor Examination, as it is at present conducted, is everything that could be desired, fair and square, and if a candidate knows his work he will qualify; if not, then he must go back and work again. I know this going back means more expense and more work; but knowledge cannot be obtained without either. And should it not be so? There are already too many in the profession who are either too indolent or not capable of testing their own drugs, but should know whether they are up to the standard or not—deterioration or no deterioration—and not leave it for the food and drug inspector to have to inform them. To split up the examination or to alter its present form, what would it mean? To my mind—and I am not speaking as a student, but as a demonstrator—simply this: the candidate would work alone for those subjects which he had failed in previously, utterly neglecting the work in which he had been successful; and when he had gained his final, would in all probability have forgotten most of that in which he had previously been examined. Whereas now, if he is good in some subjects, but weak in others, he has to keep up his good points as well as strengthen his weak ones, and in doing so is a far better all-round man, making both a better servant and master, one in whom confidence will be placed by the public and master alike, because he knows his work. Why is the Minor Examination of to-day more stringent than the one of old? "To raise the tone of the profession, to make young men men of knowledge, men of understanding, and men of stamina," and there is not the slightest doubt it does its duty far more than the examinations of ten years ago did. To some who read this it may appear I qualified first time trying; but I am not ashamed to say I did not, because I know that in being sent back I gained far more knowledge than I should have had, had I qualified previously. And this, I have not the slightest hesitation in saying, will be the verdict of every candidate when he finally obtains his diploma, however many times he may be plucked. Already there is plenty of cheap labour in the market—far too much of it, in fact; and "No Division" of the 3rd inst. to my mind is quite right in assuming that a division would only cheapen labour. I would also add, take from us our right position, which we are gradually getting back, and place us where we were ten or twelve years ago, when a chemist's assistant did not receive for his services as much as a navvy would.

Gainsborough, May 13, 1902. J. H. Shuttleworth.

Protection of Title.

Will you allow me to draw the attention of voters at the coming election (particularly Grimsby members) to the fact that in my election address I make the protection of the title my chief care? For several years I have repeatedly drawn attention to the facility with which capitalists and unscrupulous traders have been, and are still being, permitted to use a title to which they have no legal claim? It will be my first duty when on the Council to know how much longer we are to suffer from this injustice, and why action has not been taken in certain cases where information of this infringement has been given. A test case on the title question has never been attempted, so that the case of the London and Provincial Supply Association, so often quoted, does not apply here. The present Acts, if properly represented and enforced, will be found to be held by the judges quite sufficient to put a stop to this. What right, for instance, have Messrs. Spiers and Pond or Messrs. Boot, Limited, to the title? What examinations have qualified them? Doubtless there are few chemists who cannot supply the Society with plenty of material for any number of test cases. It is a serious matter, and I for one intend having it seen to. Should the present Acts, after a test case has been heard, fail to protect the title, then will be the time to amend them, and immediately. I trust every other association will adopt the same attitude as Grimsby.

London, May 12, 1902. C. E. Pickering.

Pharmacopedy or Materia Medica.

It is unnecessary for me to reply further to Mr. Gamble, except to say (1) that he appears to have forgotten what he set out to prove, and (2) that time alone can show whether the word "pharmacopedy" and its derivatives are fit to survive.

London, May 13, 1902. John Humphrey.

The Sale of Galenicals.

Reading in last week's *P.J.* the reports of the cases in which vinegar of squills was found to be "wanting," set me wondering as to the power of the shopkeeper to refuse to sell any article to an inspector. Only this morning a customer wanted some Ung. Plumbi Carb., and on going to the jar I found the ointment to be decidedly ancient and unfit to sell. Now, am I bound to have served an inspector with that ointment, because, if so, it is most unfair? Although all our preparations are strictly B.P., in a small business something is likely to go "off" and have to be thrown away, and an inspector generally wants some article that is not in every-day demand.

May 12, 1902. "H. T. T. R." (134/18).

Charlock Destroying.

At the present time I have numerous inquiries as to what height the charlock is most easily killed by spraying with copper sulphate. The height of the charlock is not a safe guide as to the best time to spray it. In many districts, both in England and Scotland, last season, I saw charlock only about two or three inches high, but that was old and tough as wire, and just coming into flower. Owing to the cold and unfavourable season, it had grown slowly, and should have been sprayed weeks earlier. When the weather is favourable, and the plant grows away quickly, it may be successfully destroyed up to six or eight inches high. The only safe guide that I know of at present as to the best time to kill the charlock is when the plant is young and in soft fibre, after it has put out a few rough leaves. Under such conditions every plant that receives its proportionate share of fifty gallons of 3 per cent. solution of copper sulphate per acre will be destroyed (*i.e.*, 15 lbs. in fifty gallons of water). I have just had an opportunity of superintending some field-spraying under these conditions, and am now informed that 95 per cent. of the charlock is already dead. I have adopted a practice which I would recommend to all who spray charlock. Have two or three old manure bags and lay them down over the charlock in the track of the spraying machine. The plants covered by the bags will have been protected from the spray. These plots will show a sharply-defined contrast between the sprayed and unsprayed charlock, and give a clear, decided lesson as to the value received from spraying.

London, May 8, 1902. G. F. STRAWSON.

Some Dispensing Methods.

The first object of my paper, which was kindly read by Mr. J. R. Hill in my absence, at the Evening Meeting in Edinburgh, on Wednesday, April 23, and reported in the *P.J.* of the same week (see *ante*, p. 342), was to fulfil a promise made early in the session, and the second was to bring forward a subject in which all would be at least interested. Perhaps I did not make it sufficiently plain that the main object of my paper was to excite discussion of the dispensing difficulties which beset the dispensing chemist, rather than to state the best dispensing methods. It is much to be desired that a working understanding be come to, and with this object the simple method—sometimes adopted—might be more freely practised—namely, that of noting on the prescription any addition or modification which the dispenser has found necessary to make. It does not necessarily follow that subsequent dispensers would always adopt the first dispenser's note, but in most cases they would, provided no good pharmaceutical reason could be urged against it. With reference to the use of powdered flies or liquid blister on emplast. canthar., so far as I am aware this is a very usual practice, but it would be interesting to know the experience of those who simply spread the B.P. plaster.

Edinburgh, May 7, 1902. W. S. GLASS.

A Degree in Pharmacy.

There has been a good deal of discussion lately concerning the advisability of establishing a degree in pharmacy. In my opinion such a degree is not required; the work the average pharmacist is called upon to do does not call for further education, and the remuneration offered is too small. Nine-tenths of the work which the ordinary chemist is called upon to do could be done by any man of ordinary intelligence. His calling is, for the greater part, that of a tradesman, and pharmacy, therefore, must be looked upon as a trade, and not as a profession. The only professional part of it is dispensing, and yet I venture to say that the men who are exclusively engaged in that work at hospitals and such-like institutions are looked down upon. In last week's *P.J.* there were two advertisements for dispensers, both offering £70 per annum, one holding out as an inducement a rise to £80. Why, dustmen get as much as 28s. a week, besides tips and pickings. I know several dispensers who, like myself, hold the Major diploma, who regret that they worked for this higher certificate; it has brought them no position either socially or financially. Again, one can see what the Government think of dispensers by the terms offered for service in South Africa. Now, until pharmacists (including dispensers) are offered a better position a degree in pharmacy is not wanted. Can one be surprised at the lack of apprentices? What boy who has had a liberal education would go to a chemist's shop to work from 9 a.m. till 8 p.m. for, say, three years, then go to the "Square" for nearly two years, pass the Minor and Major examinations, and then find that he can earn little more than a scavenger? Truly pharmacy is a strange calling.

London, April 29, 1902. "MIST. ALB." (132/26).

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply.

CARNAUBA WAX (W. A. H.—73/26).—A brief note on the subject appeared in the *P.J.* for January 4 last, at page 20.

PASTEUR INSTITUTE (W. T.—73/32).—You might with advantage communicate with the Secretary of the Jenner Institute of Preventive Medicine, Grosvenor Road, London, S.W.

BULLETIN OF PHARMACY (J. R. P.—73/27).—It is a monthly review of pharmaceutical literature, progress, and news, published by W. M. Warren, Detroit, Mich., U.S.A., and supplied at an annual subscription of one dollar.

DEVELOPER (T. T. L.—73/29)—The quantity of metol ordered in the formula to which you refer is too great, as it tends to crystallise out below 15·5° C.; a modification of the formula was given at page 5 of the *P.J.* Photographic Supplement, published March 22 last.

SACCHAROMETER (J. W. T. M.—73/25).—It is difficult to say without seeing the apparatus and instructions, but so far as can be gathered from a sketch of the apparatus in a price-list the upright tube is graduated and should be kept closed in order that the amount of gas produced may be measured, after the liquid has been forced back into the bulb and remains at a constant level in the upright tube.

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THE REASONS FOR DIVIDING THE MINOR EXAMINATION.

In view of the fact that division of the qualifying examination in pharmacy is now attracting special attention, careful study of the reasons assigned in support of that step appears desirable. For it must be borne in mind that the examination exists exclusively for the purpose of insuring, in the public interest, that no unfit person shall be registered as a chemist and druggist. The object is not—as many seem to think—to facilitate the acquirement of a valuable business asset, such as the legal qualification undoubtedly is. The reason usually put forward by advocates of the suggested change is that examination in so many subjects at once is unfair to those who seek registration as chemists and druggists. In that sense, Mr. J. Rymer Young, at the April meeting of the Council (see *ante*, p. 300), expressed the opinion that the present system of examination is wrong, because candidates who pass in a certain subject, on one occasion, sometimes fail in that same subject when they again present themselves. It would be more in accordance with facts, however, to say that the defect is in the system of "preparation" which now takes the place of education, since it is insufficient to give candidates such a sound acquaintance with the subjects that the knowledge acquired can be retained. Another reason sometimes advanced is that there is no examination which is distinguished by a greater element of chance than the qualifying examination in pharmacy. That opinion was expressed at the April Council meeting, but surely it points to a chance that unfit persons may secure registration, because examination—without proof of adequate training—might occasionally fail to secure their rejection. In any case, division of the examination without better means of education would simply offer greater chance for incompetent candidates to pass by a mere effort of memory.

While the Council of the Pharmaceutical Society is virtually agreed as to the desirability of dividing the examination which is the statutory test of qualification, the members of that executive body differ as to the manner in which the matter should be dealt with; the majority being of opinion that the question of division should not be considered apart from some guarantee of education. That is to say, though fully prepared to do whatever may appear just and considerate in the interests of candidates for registration under the Pharmacy Act, they recognise that the Society owes a more important duty to the public in whose interest registration exists. From that point of view the chief thing to be considered is the efficiency of examination for maintenance of the standard of qualification, not how the system of examination can be modified so as to enable candidates to pass more easily, or to have a greater chance of getting through than at present. Everything that is reasonable should be done to reduce the large percentage of failures; but in the public interest, as well as in the interest of qualified chemists, no step should be taken that would increase the chance of unfit persons securing registration. Many of those who advocate division are, it is greatly to be feared, influenced by a desire that the large percentage of failures should be diminished by means of a lowering of the standard, their unexpressed object being to insure that there shall be a larger number of registered persons available as assistants, at lower salaries than those at present demanded by duly qualified persons. But since the public interest demands that only those who are thoroughly competent shall be registered as chemists and druggists, the private interests of individuals must continue subservient to that object. It is no mere fad that underlies the demand for a compulsory curriculum to precede division of the qualifying examination, but a conviction that, without evidence of satisfactory training, a piecemeal examination may prove altogether insufficient as a test of qualification.

The real trouble in connection with the present system of qualification is that the qualifying examination does not correspond to the business in which many candidates have been trained. After working for several years in places of business where pharmacy is an unknown quantity, circumstances compel them at the end of their period of pupilage, in a sadly too limited time, to become acquainted with a mass of information never presented to them before, the proper assimilation of which is absolutely impossible in the time available. Entering after such preparation for the qualifying examination, they find most of their business knowledge useless for the time being, while their forced acquaintance with the special subjects proves totally inadequate. The fault is that a qualification intended to indicate the capacity of persons possessing it to pursue a semi-professional calling, should have come to be regarded as the hall-mark of a kind of variety tradesman. Possibly there may be no reason whatever why a very large number of persons who are now registered as chemists and druggists should have troubled to become acquainted with practical chemistry and practical pharmacy, or about passing examinations at all for securing registration, except that, as already stated, they find registration under the Pharmacy Act a valuable business asset. Happily some of the letters received on this subject show that a very different view is entertained as to what is necessary in the interests of British pharmacists. But the mere trader in proprietary articles and sundries, who desires to reap commercial advantage by getting through an examination in subjects which have no bearing on his regular business, cannot be expected to view matters in a similar light.

ANNOTATIONS.

The Arsenical Poisoning Commission continues to take evidence and, last week, Mr. Fletcher Moulton, K.C., M.P.—who acted as Chairman of the Expert Committee called in by the Manchester Brewers' Association when the poisoning epidemic occurred in that city—explained that at that time it was thought the presence of arsenic was due entirely to the accidental contamination of the glucose used, but it was subsequently found that the malt might be contaminated, and since the scare the Expert Committee had pursued its inquiries. Mr. Moulton said he had the impression from the close resemblance found between the neuritis which characterised the Manchester outbreak and alcoholic neuritis, which had never previously been attributed to arsenic, that there must have been contamination of beer by arsenic through the malt for a long time, and that such contamination had played a considerable part in causing the so-called alcoholism produced by beer. He was quite satisfied that the brewing firms were now on their guard against arsenic, but he was much less certain with regard to malt. Malt should be made by such a method that the fumes did not come into direct contact with the grain, or else there should be better tests for purity and a better selection of fuel. He thought, however, the brewers were holding their hands to some extent to see if the Commission would authoritatively lay down the necessary precautions. The Expert Committee recommended that brewers should make it a rule to obtain a written guarantee for brewing material of every kind as being free from arsenic. He quite agreed that it would be a strong protection if an official test was prescribed by the Inland Revenue for brewing material, but it should be a practical test which could be easily applied. The Expert Committee came to the conclusion that southern malts were freer from contamination than northern malts. Professor Thorpe, who also gave evidence, said the danger lay in the temptation to the small brewer to purchase cheap and possibly contaminated raw material. Such a man would not be likely to go to the expense of having an analysis, but he would be able to apply the Reinsch test, as recommended in the Expert Committee's final report. He thought also that, if it were practicable, there should be periodical testings for arsenic in beer at the Government laboratory upon samples taken from all the breweries throughout the country, the brewers being informed as to the result of the test. He would prohibit the use of coke in malting, and believed that, if properly selected anthracite was used, cleanliness was used in the kiln, and the malt was well brushed, the public would be amply safeguarded against arsenical contamination in beer.

The Work of the Poisons Committee was referred to at the annual conference of the Ironmongers' Federated Association, held in Birmingham last week. In his report, the general secretary of that body said great hardship had been caused to ironmongers through the prosecutions instituted by the Pharmaceutical Society, in consequence of which they were not allowed to sell such things as sheep dip or even green paint (*sic*). Presumably, the inaccuracy in the secretary's statement was due to a misapprehension with regard to the recent emerald green case at Leeds (see *P.J. ante*, p. 74), but surely an official report ought to be drafted more carefully than appears to have been done in this instance. The Pharmaceutical Society had nothing whatever to do with that prosecution, and has no desire to interfere with the sale of pigments, even though they contain scheduled poisons. The secretary of the Association also informed the members that he had given evidence before the Privy Council's Poisons Committee, but he did not say whether he had repeated the fiction about green paint on that occasion. He contented himself with expressing the opinion that—apparently as the result of his evidence—some modification of the law regulating the sale of poisons would be recommended by the Committee. It is easy to prophesy on those lines, but such modification as may be recommended, and agreed to by Parliament, is not likely to remove any disability under which ironmongers or other tradesmen labour in connection with the sale of scheduled poisons.

New Botanical Laboratories, believed to be among the finest in the country, were formally opened by Sir W. T. Thiselton-Dyer, at Liverpool University College, on May 10. The laboratories, which will be in charge of Professor Harry Gibson, cover a site of some three thousand square feet, and the College is indebted for both land and buildings to Mr. W. P. Hartley, of Aintree.

Bachelors of Commerce may be expected to exist some three years hence, the University of Birmingham having decided to grant a special degree to students who matriculate in the Faculty of Commerce and satisfy the examiners, after undergoing a specified course of training. The intention of the University is to provide a course of training suitable for men who look forward to business careers. The object is the education of the "officers of the industrial and commercial army," rather than the rank and file. That is to say, it is hoped that the Birmingham bachelors of commerce will prove especially fit to act as principals, directors, managers, secretaries, heads of departments, etc., thus guiding the business activity of the country. The establishment of the Faculty of Commerce is the outcome of motives similar to those which are leading to the creation of like institutions in Germany and the United States, and it is believed that a training can be devised which will be of real value as a preparation for the practical duties of later life, in addition to strengthening the powers of judgment, widening the sympathies, and stimulating the imagination. Further, it is felt that universities, in order to maintain their position in the modern world, must have regard to the dominant interests of that world and not be content simply to prepare men for the so-called learned professions.

The New Degree will be granted to students who have matriculated in the University of Birmingham and have acquitted themselves with credit in the requisite class work and examinations. They can matriculate by passing the matriculation examination of the University or on producing evidence that they have passed one of the examinations which the University accepts in lieu thereof, but every candidate in the Faculty of Commerce must pass in five subjects before he is allowed to enter for the next University examination, viz.:—(1) English language, literature, and history. (2 and 3) Any two languages out of the following:—French, German, Italian, Spanish, Latin. It is held to be very desirable that students should enter upon their work in the Faculty of Commerce with an elementary knowledge of two modern foreign languages, but for the present Latin and one modern foreign language will be accepted for matriculation. (4) Mathematics. (5) One science subject chosen from the following:—Mechanics, chemistry, physiography. But, although students will not be allowed to enter for the next University examination until they have passed in five subjects, they may be matriculated in the Faculty of Commerce on passing an examination in—(1) English, (2) mathematics, (3) one of the prescribed languages, and (4) either a science or another language. The deficiency must be repaired subsequently by passing in the fifth subject. Attention is called to the fact that there are other subjects, besides these examined upon at matriculation, which may advantageously be studied at school by boys looking forward to business pursuits. Thus, skill in freehand and geometrical drawing will in many cases be found of practical advantage in after life, and a knowledge of shorthand will be found especially useful by boys whose careers depend entirely on their own ability and exertions. Although no age limit will be set, and every case will be determined upon its merits, the Faculty of Commerce reserves the right of postponing the admission of students who appear insufficiently mature in mind and character to benefit by the instruction. Such students may be advised to spend a preliminary year in a workshop or counting-house. The same plan may properly be recommended in some cases to students who look forward to entering any business in which early practical training is desirable. Candidates for the degree of B.Com. are required to have attended the stated courses of study and to have passed the University examinations thereon at the end of each of the three years. There will be a *viva voce* examination in foreign languages in each year and also in such other subjects in the third and final examination as the examiners may determine.

An Important Point is raised by a member of the Pharmaceutical Society, whose letter appears at page 418 of this week's Journal, the point being whether a chemist is bound to serve an inspector under the Sale of Food and Drugs Acts with an ointment which has become decomposed on keeping, when the official preparation which that ointment has at one time properly represented is asked for. The article mentioned is one for which there is not a great demand and, in its present condition, would not be sold in the ordinary course. Being a preparation which can be made very readily at a moment's notice, there is no reason why a fresh supply should not be made while the customer waited, but, inasmuch as refusal to sell any drug exposed to sale renders the shopkeeper liable to a penalty, the question remains whether any difficulty would be likely to arise in case an inspector insisted upon being served with the article which happened to be in stock. Incidentally, it may be asked how the ointment mentioned by "H. T. T. R." came to be unfit to sell? If made according to the present B.P., with paraffin ointment, it ought to keep well for a lengthened period. Can it be, however, that the stock had not been renewed since the previous pharmacopœia was in force and a preparation of inferior keeping qualities was official? That, however, is quite by the way.

The Sale of Food and Drugs Act, 1875, makes it a punishable offence to sell to the prejudice of the purchaser any drug which is not of the nature, substance, and quality of the article demanded. Further, Section 17 of that Act provides that if any officer, inspector, or constable shall apply to purchase "any drug exposed to sale, or on sale by retail on any premises or in any shop or stores," the person exposing the same for sale shall be liable to a penalty not exceeding ten pounds if he refuse to sell the drug asked for. It might, of course, be contended that, in the case put by "H. T. T. R.," the drug was not "exposed to sale, or on sale by retail," and, in the circumstances, the chemist would be quite justified in stating that the B.P. article asked for was not in stock, the ointment contained in the shop jar not being in accordance with the B.P. standard. A much better plan, however, would be to avoid having any decomposed ointment of any kind on the premises. In fact, every chemist ought to submit all his drugs and galenical preparations to systematic examination periodically, rejecting any that are not as they ought to be and being especially careful with regard to those which are most prone to decomposition.

Poison Labels on which the names of suitable antidotes are printed have much to recommend them, but the *Medical Press* thinks the extra matter printed on the labels may interfere with or tend to obscure the danger-signal which should be afforded by having the name of the substance and the word "Poison" in clear, bold type. If the type be sufficiently clear and bold to catch the eye and arrest attention, an antidote is not likely to be required, and, in any case, suitable antidotes are not often to be found in private houses. Moreover, the reading of a list of antidotes causes time to be lost in putting them to the test, and every moment is precious in cases of poisoning. Further, lists of antidotes are useless to careful people, as they do not drink or administer medicine without reading the directions, so are not likely to drink or administer properly labelled poisons in mistake. Careless people, on the other hand, who confuse mixtures, liniments, and lotions, and swallow medicine without even removing the wrappers from bottles, never read labels and would not be likely to profit by lists of antidotes printed thereon. The *Medical Press*, therefore, arrives at the conclusion that the practice of overloading poison labels with lists of antidotes, though admirable in theory, would be pernicious in practice.

The Human Eye has Defects, especially in persons who are getting old, and artificial means are required in order to minimise the inconvenience caused by those defects. Reasoning by analogy, a correspondent of *Nature* suggests that diminishing the aperture of the eye by "stopping down the lens" ought to improve defective definition and make the vision sharper, and he finds that experiment proves such to be actually the fact. In photography, if a lens is affected with spherical aberration or other defects, or if the aperture is too large for good definition, the operator usually gets over the difficulty by using a smaller aperture or stop. This "stopping down the lens" improves the definition and makes the picture sharp even to the corners of the plate. The best effect in the case of the human eye is obtained by holding a thin metal plate close to the eye, with an aperture in it one-fiftieth of an inch in diameter. This arrangement resembles that of the old single landscape lens used in photography, with the small stop in front, the lens in the middle, and the sensitive plate or retina at the back. With a stop of that size, the writer of the note referred to says he can easily read small print within four inches of the eye (or even less) in a good light, without spectacles, though he is normally obliged to use convex glasses.

The Royal Society held its first soirée of the present year on Wednesday, May 14, when a large and distinguished company foregathered at Burlington House, and the President (Sir William Higgins) did the honours. The exhibits of inventions on view during the evening were generally of scientific interest, the X-rays still continuing to take a conspicuous place. Three-colour photography was also much in evidence, and electric lantern displays were given showing the application of photography to the production of pictures in colour. Mr. R. L. Mond and Dr. Wilderman showed a new and improved type of chronograph, to be used for accurate measurements of time in scientific research, and an interesting demonstration was given of retransmission or submarine telegraph cables.

POISONING CASES.

Eighteen deaths by poison have been reported during the past week—seven accidental cases and eleven suicides, thus:—

Poison.	Accident.	Suicide.
Ammonia	—	1
Carbolic Acid	1	2
Chlorodyne	1	—
Laudanum	1	4
Nitric Acid	1	—
Opium	1	—
Oxalic Acid	—	2
Phosphorus	—	1
Strychnine	1	1
Zinc Chloride	1	—

Ammonia was taken by a woman (28) at Fittleworth and, though evidence was given at the inquest to show that she had been in the habit of taking it as a tonic, the jury appeared to consider that the quantity taken—half-a-pint—justified them in regarding the case as one of suicide.

Carbolic Acid was taken by a Gateshead man in mistake for ginger-beer; also purposely by a girl of seventeen at Edinburgh, and by a Nottingham man.

Chlorodyne inadvertently taken in excessive quantity caused the death of a widow (62) at Bagshot.

Laudanum caused the death of a Birmingham manufacturer who inadvertently took an overdose. The same poison was taken purposely by a Stratford tradesman, a tailor at Westbourne Park, a Wainfleet man, and, mixed with opodeldoc, by a woman at Grantham.

Nitric Acid was taken by a petty officer in the Navy, who died in the Royal Naval Hospital, Chatham.

Opium was taken in excessive quantity by a seaman at Hull who had been in the habit of using the drug.

Oxalic Acid was taken by an Islington dentist; also by a labourer at Chudleigh.

Phosphorus Paste was taken by a man who was found ill in a train at Chelmsford and died shortly afterwards; also by a woman (43) at Birmingham.

Strychnine was purposely taken by a chemist's apprentice at Reading; also in mistake for morphine by a Plumstead surgeon (see p. 424).

Zinc Chloride, in the form of soldering fluid, was taken by a young man at Barry in mistake for medicine, which was kept in the same cupboard in his bedroom.

Non-Fatal Cases.—In the cases of attempted suicide reported during the week, the poisons used were tincture of belladonna, carbolic acid, hydrochloric acid, and laudanum, the last-mentioned poison being used in three cases, and each of the others in one case.

OBITUARY.

Andrews.—On May 9, Frederick Andrews, Pharmaceutical Chemist, Leinster Terrace, Hyde Park, W., Aged 73. Mr. Andrews, who had been a member of the Pharmaceutical Society since 1857, was among the first to be appointed local officers of the Society, a position he retained till about a month ago, when he tendered his resignation as Divisional Secretary for South Paddington, on account of failing health. Mr. Andrews also served the Society in other capacities, having acted as an Auditor in 1868, 1872-74, and again in 1877, and as a member of the Council from 1880 to 1884. He was also prominently connected with the Western Chemists' Association (of London), being one of the founders and a past-President (1893-4), while at the time of his death he was a member of the Committee of the Association. In many other ways Mr. Andrews took an active part in matters pharmaceutical, being a member of the British Pharmaceutical Conference, a director of the Chemists' Defence Association, a member of the P.A.T.A., and a member of the provisional committee of the newly-formed London Chemists' Association.

Edisbury.—On May 9, Lawton Edisbury, Chemist and Druggist, Liverpool. Aged 78.

White.—On May 3, Tom M'Call White, Chemist and Druggist, Wigton. Aged 54.

BRITISH PHARMACEUTICAL CONFERENCE.

RESEARCH LIST.

The following subjects are suggested for investigation, and the Executive Committee hopes that members of the B.P.C. will undertake to work at one or more of these questions.

New subjects have been added to the list to replace those worked out.

The Hon. Secs. wish to call attention to the fact that a special fund was raised last year to defray expenses connected with original research.

The Executive Committee will be glad to receive applications from members for grants from the above fund.

PLANT ANALYSIS.

(1) **Arnica.**—What is the active principle, and what are the relative proportions of it in the root and flower?

(2) **Ash.**—What are the percentages of ash that should be found in the following drugs in powder:—Rhubarb (*R. rhaponticum, R. palmatum, R. officinale*), storax, guaiacum resin, digitalis, catechu, cambogia, belladonna (leaves and root), araroba, aniseed fruit?

(3) **Cascara Sagrada.**—What is the nature of the various resins contained in the bark? The cascara sagrada bark of commerce apparently consists of two species, *R. purshiana* and *R. californica*, the latter having a much paler fracture. It is desirable to ascertain how far these differ in activity, percentage of active principles, yield of extract, etc. (See 'Year-Book of Pharmacy,' 1893, p. 131, and 'Year-Book of Pharmacy,' 1899, p. 134.)

(4) **Castor Oil.**—A research having for its object the isolation of the purgative principle either from the oil or seed is required. (See 'Year-Book of Pharmacy,' 1898, p. 184; 1898, p. 163; 1901, p. 125. See *Pharm. Journal*, [4], **5**, p. 84, and *Pharm. Journal*, [4], **11**, p. 152.)

(5) **Chamomile.**—Research upon the bitter principle of *Anthemis nobilis*. (See *Bulletin de la Société Chimique de Paris* [2], **41**, p. 483.)

(6) **Cimicifuga Racemosa** (*Actæa racemosa*).—Further information is needed on the chemical nature of the constituent or constituents to which the rhizome of the plant owes its activity. (See 'Year-Book of Pharmacy,' 1885, p. 149.)

(7) **Damiana** is reported to contain a bitter substance, resins, and volatile oil. The liquid extract of the leaves now being extensively used, a thorough, systematic examination of this drug is desirable.

(8) **Dulcamara.**—It is uncertain whether this drug contains the alkaloid solanine or not. Experiments upon it, therefore, are needed.

(9) **Euphorbia Pilulifera.**—Required, a report upon the chemistry of this drug.

(10) **Fucus Vesiculosus.**—The medicinal virtues have been attributed solely to the presence of iodine and bromine. It is not improbable that it may also contain some organic con-

stituent of importance. A complete chemical investigation is required.

(11) **Mezereon Bark.**—What is the chemical nature of the acrid principle of this bark?

(12) **Papaver Rhœas.**—An examination of the red colouring matter of the petals is required.

(13) **Senna Fruits.**—A comparison of the constituents of the leaves and fruits would be of interest.

(14) **Simarouba Bark.**—A comparison of the constituents of this drug with those of quassia wood is desirable.

(15) **Strophanthus.**—Information is desirable on the best methods of separating the different active principles obtained from strophanthus seeds:—(1) 'Year-Book of Pharmacy,' 1898, p. 54 and p. 162; (2) 'Year-Book of Pharmacy,' 1899, p. 59; (3) 'Year-Book of Pharmacy,' 1901, p. 167; (4) *Pharm. Journ.* [4], **6**, p. 385; (5) *Pharm. Journ.* [4], **6**, p. 506.

(16) **Taraxacum.**—What is the active principle of the root? To what constituents are the chologogue and diuretic properties due?

(17) **Veratrine.**—Can a process be devised for preparing an alkaloid of more definite composition than the official veratrine from cevadilla seed? (See 'Year-Book of Pharmacy,' 1898, p. 58; 'Year-Book of Pharmacy,' 1899, p. 54.)

(18) **Proximate Analyses** of following drugs are required:—*Cereus grandiflorus*, *Citrullus colocynthis*, and *Cassia fistula*.

CHEMISTRY.

(19) **Adeps.**—A satisfactory test for the presence of cotton oil is needed. A good test for lard oil is required.

(20) **Ferri Arsenas.**—The official list supplies only the means of determining the amount of ferrous iron present. It has been suggested that a method for the determination of the arsenic content should be ordered. (See *Pharm. Journ.* [4], **7**, p. 530.)

(21) **Glycerin.**—Required a good method for estimating this substance, applicable if possible to pharmaceutical preparations.

(22) **Olive Oil.**—An enquiry into the British Pharmacopœia tests for this oil, and their bearing on the purity of commercial samples, is much needed.

(23) **Resins, etc.**—Is it desirable to introduce acid and saponification values into the official descriptions? If so, experiments to determine the limits of these for the more important resins, etc., should be carried out.

(24) **Sodium Arsenate.**—A better method of assay than that now official would be welcome.

(25) **Tannins.**—The various methods employed for the estimation of tannin in astringent drugs and preparations give very discrepant results. Required, a thorough research into the comparative merits of these processes.

PHARMACOPEDY AND PHARMACY.

(26) **Cannabis Indica.**—Preparations of uniform strength of this drug are a desideratum. Experiments are required as to best method of preparation and solvent. Experiments are also needed to determine the difference in yield of resin, cannabin, and cannabinol between the Guaza of Bombay and the Ganjah of Calcutta.

(27) **Compressed Drugs and Coated Pills.**—Required, a report on the strength and quality of the compressed drugs and coated pills of commerce.

(28) **Effect of Cultivation, Soil, Climate, and Time of Collection on Medicinal Plants.**—Compare the proportions of active constituents of indigenous plants grown in different districts, and the effect upon these constituents by time of collection.

(29) **Ergot.**—The determination of the proportion of alkaloid extracted from ergot by the official processes for the various preparations.

(30) **Extraction of Drugs by Pressure.**—This mode of extraction (see Dr. Symes's suggestions in the 'Year-Book of Pharmacy,' 1888, p. 356) is likely to produce good results with a number of drugs. Required, a series of experiments in this direction, showing the effect of the process on the quality and yield of extracts as compared with the corresponding products obtained by the ordinary modes of extraction.

(31) **Extractum Taraxaci Liquidum.**—The specific gravity and proportion of solid residue appears to vary much in commercial specimens. Is this due to variable amount of extraction in the dry root, and, if so, should the strength be adjusted by the percentage of extractive, as in the official method for the preparation of extractum pareiræ liquidum?

(32) **Jaborandi.**—The leaves as imported are much mixed with stalks. Should the leaves be completely separated from the stalks for the making of official preparations? What is the alkaloidal strength of old leaves, young leaves, and stalks?

(33) **Liquor Sennæ Concentratus.**—In this preparation the senna is exhausted by repercolation; in the liquor for preparing syrupus sennæ, B.P., a process of double maceration is employed. Which is the better method?

(34) **Mispronunciation of Latin Pharmacopœia Names in Common Use.**—It is suggested that a short prosody be compiled for purposes of reference.

(35) **Olive Oil.**—It has been suggested that for some galenical preparations purified cotton seed oil, arachis oil, or sesame oil might be substituted for olive oil. A series of plasters, liniments, ointments, etc., should be prepared with each of these oils, and the resulting product compared.

(36) **Pepsin.**—A good method of assaying, peptonising and not merely determining the dissolving power of pepsin, suitable for inclusion in the British Pharmacopœia, is wanted. (See Allen, *Pharm. Journ.* [4], **5**, 561.)

(37) **Podophyllum Resin.**—Much of the podophyllin in the market is of foreign manufacture, and does not answer the requirements of the official resin. An examination of commercial specimens would be of value.

(38) **Standardisation.**—It is suggested that the Pharmacopœia preparation of aconite, stramonium, strophanthus, Calabar bean, colchicum and jaborandi should be standardised. Processes of assay are required.

LEGAL INTELLIGENCE.

Litigation Over a Proprietary Syrup.

At Liverpool Assizes, on May 8, before Mr. Justice Willis, Mr. Wm. Butterfield, chemist and druggist, Blackburn, sought to recover damages from an Accrington grocer, named Patrick Hughes, for alleged misrepresentation in respect to a sale of a drug known as Butterfield's syrup. The plaintiff also asked for an injunction restraining the defendant from selling the alleged misrepresented drug.

The Judge asked whether the drug was "our old friend, Gripe Syrup."

Plaintiff's counsel gave an affirmative reply, and explained that nine out of the ten cases of a similar kind had been disposed of. Defendant had for years been a customer of the plaintiff, but he had been induced by a former traveller of the plaintiff's, named Alsop, to take the latter's syrup, on the representation that it was practically the same, while it was cheaper. A retired detective inspector was retained by the plaintiff, and on visiting the defendant's shop he found Hughes selling as Butterfield's syrup a compound which had been supplied to him by Alsop.

For the defence it was urged that a mistake had been made by the defendant's wife in selling Alsop's syrup for that of the plaintiff's make, and that this mistake had been admitted all through.

Mr. Justice Willis suggested that the parties should make a settlement, and it was agreed that a juror should be withdrawn on the defendant giving an undertaking in terms of the injunction sought for, each party to pay his own costs.

Strychnine Supplied Instead of Morphine.

As briefly reported in the *P.J. Inset* of April 26 last, it was shown at an inquest held at Woolwich, on April 18, that Dr. Ingledew, a Plumstead surgeon, had died suddenly after taking a dose of what he supposed to be morphine hydrochloride. Before he died he said he thought he had been given strychnine instead of morphine, but Patrick Kavanagh, assistant to Mr. A. Goldthorpe, chemist and druggist, Plumstead, stated at the inquest that he was positive he had supplied morphine hydrochloride to the doctor's messenger.

At the adjourned inquest, held on May 9, Kavanagh was re-examined and repeated that he was perfectly certain that he gave a drachm of morphine hydrochloride, and not strychnine. He showed the order brought by the doctor's boy to Mr. Ingham, the manager, who said: "It's all right; it's for Dr. Ingledew; you can serve it." He had been a week only in the shop, and had not used the poison cupboard before, so that before he discovered the bottle he had to look for the label he wanted.

John B. Ingham said he was a registered chemist and manager to Mr. Goldthorpe, at 70, Herbert Road, Plumstead. Kavanagh showed him the order, and added that the boy said it was from Dr. Ingledew. Witness replied: "It's quite correct; you'll find it in the poison cupboard; second shelf from the bottom." All the doctor's orders were initialled. He told Kavanagh to charge 1s. He did not enter the order in the Poisons Book, because it came from a medical man, nor did he think it necessary to keep the order. Kavanagh, not knowing the doctor's initials, asked him about it, and he told him to supply. He received similar orders every ten or fourteen days. They were always written in the same form, and that accounted for his not attaching any importance to the order. It was regarded as being for the doctor's professional use.

Mary Catherine Ingledew, wife of the deceased, said she was not present when the doctor gave the order to the boy, but when he came back she saw him give the doctor a packet with an orange poison label. Her husband put it into his pocket, but made no remark. Subsequently, the doctor gave the packet to Mr. Thomas, an inmate of the household, to make up. She saw Thomas with it in the kitchen, and heard him remark that it was very inferior stuff. She asked him what was the matter with it, and he said that it was a dirty-white powder. She examined it herself, and noticed it looked crystalline, as if improperly crushed. The powder was put into a 12-ounce bottle out of the paper, and the bottle was filled up with water. She believed Thomas took it away to the doctor's room. Dr. Ingledew was perfectly himself the next morning, and had breakfast as usual. She left him at 10.30 to go about her duties. At 11.45 she saw the bottle untouched on the mantelshelf in the doctor's consulting-room, where he always kept it. At 12 o'clock she heard her son call out, "George" (Mr. Thomas) in a frightened tone. She rushed into the room, and saw her husband sitting in his chair, leaning on the arm and bending forward slightly. He said he had been given strychnine instead of morphine. Thomas was familiar with the drugs in the surgery and was in the habit of dispensing them for the doctor.

George Thomas, who had previously described himself as an insurance agent, said he assisted Dr. Ingledew in making up his prescriptions, and did not know the difference between morphine and strychnine. He had himself occasionally fetched drugs for the doctor, and had sometimes procured strychnine for him from different chemists. In opening the packet obtained from Mr. Goldthorpe's, he noticed that the powder glittered, and he noticed small crystals. He did not say anything to the doctor, because he thought it was merely an inferior powder.

Frederick Womack said he was a registered medical practitioner, toxicological expert to the L.C.C., and Lecturer to St. Bartholomew's Hospital. He had analysed the contents of the stomach and the solution. The bottle, he said, held about eight ounces of a colourless acid solution, which contained, in all, about 4·5 grs. of strychnine. He found a small quantity (about 0·17 gr.) of strychnine in the stomach. That left about 55 grains unaccounted for. There was no trace of morphine in the bottle. From the result of his analysis and what he had since heard of the fatal symptoms he thought that deceased had died of strychnine poisoning.

After the Coroner had summed up the case, the jury retired to consider their verdict, and the result of their deliberations was "That the deceased George Ingledew died from strychnine supplied to him by Patrick Kavanagh, in mistake for morphine which the deceased had ordered, but did not suspect was strychnine, but that it was not supplied by the said Patrick Kavanagh with felonious intent or with violent hands." They added a rider to the effect that George Thomas should be censured for dispensing poisons which he did not understand, and because he did not, when dissatisfied with the contents of the packet, show it to the doctor.

The Coroner administered a severe rebuke to Mr. Thomas for dispensing medicines when, upon his own showing, he knew nothing whatever about drugs. He also added that if he had called the deceased's attention to the powder, as he ought to have done, he would have saved the doctor's life.

Alleged Unskilful First Aid Treatment.

At the Manchester County Court, before His Honour Judge Parry, on Friday, May 9, an action was heard in which Ellen Shepherd, the wife of a provision dealer, sued Henry Clinton, Every Street, Ancoats, for £50 damages for the loss of a thumb, due to the defendant's alleged unskilled treatment. Defendant was described as a chemist, but the name of Henry Clinton does not appear in the Register of Chemists and Druggists. It was stated by the plaintiff that in October last, having cut her thumb, she went to the defendant, who dressed the injury and charged her 4d. When she called again the defendant declined to take the plaster off, and told her to go to a doctor. She went to Dr. Thompson, who had to amputate the thumb. Dr. Thompson said the plaster was too tight, and had been kept on too long. The defendant said he only rendered first aid, and told the plaintiff to go to a doctor. The 4d. was to cover the cost of the material. The judge said the defendant had merely acted the part of a good Samaritan, and nothing could be said which in any way affected his position as a professional man. The plaintiff had shown a wrong feeling by bringing the action for the purpose of trying to get money. There would be judgment for the defendant, with costs.

The Composition of Female Pills.

At the adjourned inquiry into the death of Edith Ellen Tippetts, held at Manchester by the City Coroner on Friday, May 9, Mr. Robert Mountain, chemist and druggist, Rawtenstall, gave evidence regarding the composition of certain pills which had been taken by the deceased. He said he was the proprietor of the pills, but did not actually make them. They contained sulphate of iron, Barbados aloes, colocynth, southernwood, and oil of pennyroyal. They were intended for anæmia, amenorrhœa, and constipation. They were not intended to act as an ecbolic, and if they were asked for in that connection he would not supply them. Ultimately the jury returned a verdict to the effect that the deceased died from peritonitis due to an injury to the uterus, there being no evidence to show how

Fictitious Beecham's Pills.

In the Chancery Division of the High Court of Justice, on May 9, before Mr. Justice Buckley, in an action of Beecham against Pribble, Mr. Martelli, on behalf of the plaintiff, said he had a motion for an injunction against the defendant to restrain him from selling or offering for sale as Beecham's Pills, pills which were not of the plaintiff's manufacture.

The defendant, represented by Mr. Green, agreed to treat this hearing as the trial of the action, to submit to a perpetual injunction in terms of the notice of motion, and to pay an agreed sum to cover damages and costs.

There was a similar motion in an action of Beecham against Nelmes, who also, by Mr. Todd, submitted to a perpetual injunction, and was content to pay an agreed sum for damages and costs.

His lordship granted the injunctions as asked.

Charge of Embezzlement.

At the South-West London Police Court, on May 9, Joseph Milne, described as a chemists' manager, but whose name does not appear in the Register of Chemists and Druggists, was charged with embezzling £3 17s. 8d., and further with stealing and receiving 30s. belonging to his employers, Lewis and Burrows, Limited, of Great Portland Street, W.

Mr. E. W. Gough, general manager to the prosecutors, stated that in February last the accused was appointed manager of the company's branch establishment at 17, Lavender Hill, and, owing to a letter written by one of the assistants to a director, witness examined the prisoner's accounts, with the result that the £2 "change money" which the prisoner should have had in his till was found to be missing, and although the takings of two days amounted, according to the pay sheet, to £16 11s., the sum actually banked by the accused was £12 3s. 3d. In addition to this, a sum of 30s., which the accused had received from his two assistants, was also missing. The accused had borne a good character during his four years' service with the company, and he had proved himself a capable manager. It was also true that when he spoke to him concerning the deficiency he went to a shelf and took down some money—about £4, he believed—which he represented was the amount missing.

Robert Evans, an assistant in the shop, was called as a witness for the prosecution, and invited by the accused to describe how the accounts were at times manipulated. He said it was perfectly true that they had been in the habit of taking the change money from the till and making additions to the bank total on "quiet days," so as to give the impression at the head office that business was brisk; and, even at the end of one particularly good week they added money in a similar fashion, so as to make the week a "record one." He had known the prisoner to pay money out of his own pocket to make up a bad week.

The accused protested that he never used the money for any private purpose, but

The magistrate observed that that was no defence in law, for a man was legally just as guilty of embezzlement when using his master's money for the purpose of puffing the business, and concealing its true condition from his employer, as to spend it on food or drink, or fine clothes; in each case the object was his own personal aggrandisement. He remanded the accused for a week.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

Library, Museum, School, and House Committee.

ATTENDANCE IN LIBRARY.

	Total.	Highest.	Lowest.	Average.
April (London)	253	24	4	10

CIRCULATION OF BOOKS.

April.	Total.	Town.	Country.	Carriage Paid.
London Library	182	78	104	£0 19s. 8½d.
Edinburgh Library........	277	164	113	£0 4s. 0d.

DONATIONS TO THE LIBRARY (LONDON).

Sir J. Sawyer, M.D., Birmingham:—Contributions to Practical Medicine, 3rd ed., 1902.

Prof. Dr. E. Schär, Strassburg:—Beiträge zur Pharmacognostichen und Chemischen Kenntnis des Harzes und Holzes von Guajacum Officinale.

Ecole Supérieure de Pharmacie de Paris:—Theses by MM. Lavadoux, Desmoulière, Godfrin.

Dr. E. H. Squibb, Brooklyn:—Ephemeris, Vol. VI., No. 4.

Mr. E. Merck, Darmstadt:—Annual Report for 1901.

Institute of Chemistry, London:—Register, 1902; Proceedings, part 1, 1902.

Straits Settlements Botanic Garden:—Annual Report for 1901.

H.M. Secretary of State for India:—Flora of the Presidency of Bombay, by T. Cooke, part 2, 1902.

DONATIONS TO THE LIBRARY (EDINBURGH).

American Pharmaceutical Association:—Proceedings, Vol. XLIX., 1901.

Dr. E. H. Squibb, Brooklyn:—Ephemeris, Vol. VI., No. 4.

Mr. E. Merck, Darmstadt:—Annual Report for 1901.

PURCHASE OF BOOKS.

The Committee authorised the purchase of the undermentioned books:—

For the Library in London.

Ganot, Physics, 16th ed., 1902.
Ostwald, Principles of Inorganic Chemistry, 1902.
Bower and Gwynne-Vaughan, Practical Botany for Beginners, 2nd ed., 1902.
Throat Hospital Pharmacopœia, 6th ed., 1901.
Encyclopædia Britannica, supplementary volumes.

For the Library in Edinburgh.

Throat Hospital Pharmacopœia, 6th ed., 1901.
Caspari, Treatise on Pharmacy, 2nd ed., 1902.
Encyclopædia Britannica, supplementary volumes.

ATTENDANCE IN MUSEUM.

	Total.	Highest.	Lowest.	Average.
April	281	26	1	11

DONATIONS TO THE MUSEUM (LONDON).

Messrs. Allen and Hanburys, Limited:—Specimen of Oil of Sunflower Seed, expressed from seeds grown in this country.

Messrs. Wright, Layman, and Umney:—Specimen of "Cativo," an oleoresin, imported from the United States of Columbia.

DONATIONS TO THE MUSEUM (EDINBURGH).

Messrs. Duncan, Flockhart, and Co., Edinburgh:—Specimen of *Stipa viridula*, Trin., the "Sleepy Grass" of New Mexico.

Dr. J. Gordon Sharp:—Specimen of *Cryptocarya australis*, and an extract of the same from Queensland.

The Reporter for Economic Products, Calcutta:—Sample of true Seeds of *Gynocardia odorata*.

Mr. J. H. Hart, F.L.S., Trinidad:—Specimen of Fruit of a new species of *Aydendron*.

TO THE HERBARIUM.

Mr. H. P. Clarke, Malvern:—Fresh Specimen of *Paris quadrifolia*.

PHARMACEUTICAL SOCIETY OF CAPE COLONY.

A general meeting of this Society was held on April 17, in Hofmeyr's Chambers, Cape Town, the PRESIDENT, Mr. George Darroll, being in the chair. There were present Mr. F. W. C. Thomas, Vice-President and member of the Colonial Pharmacy Board; also Messrs. George Hamilton, R. S. Smiles, Alex. Cameron, Magness Elgar, and the secretary, Mr. J. Dell.

Before proceeding with the business of the meeting the PRESIDENT referred briefly but suitably to the irreparable loss sustained by South Africa and the whole Empire by the death of the Honourable C. J. Rhodes, P.C., LL.D. He would propose that a vote of sympathy be passed and recorded in the minutes.

The resolution was passed, all members standing with bowed heads.

The minutes of the previous meeting having been read and confirmed, a provisional committee to deal with the benevolent fund, which has now reached £37 15s., was then elected.

It was decided to hold a chemists' dinner, and arrangements to that end are being made.

A large amount of technical business was then gone through, and the meeting closed in the usual manner.

CHEMISTS' ASSISTANTS' ASSOCIATION.

The annual general meeting of the members was held at 73, Newman Street, London, W., on Thursday, May 8, the **President**, Mr. J. Wicliffe Peck, in the chair. The preliminary business having been despatched, Messrs. Frost and Bateson were appointed scrutineers of the voting for candidates for the Council

The **Secretary** then read the report of the Council for the session 1901-2, which was adopted, as was also the Treasurer's statement, which showed receipts—including a balance from last session of £72 4s. 10d.—£123 18s. 8d., and expenditure £54 6s. 11d., leaving a balance in hand of £69 11s. 9d.

The **President** then proposed a hearty vote of thanks to the Auditors, Messrs. Snow and Britton, which was given with applause. While the scrutineers were counting the votes a discussion took place on the best means for improving the Association, and several members severely criticised the unbusinesslike methods of the Association, it being alleged that unpunctuality at starting the meetings was one cause for the smallness of the attendance, inasmuch as it meant that when the meetings did not begin promptly at nine o'clock many of the members could not get home till after midnight. A practical suggestion for the consideration of the new Council was made by Mr. Lownsbrough. He stated that some years ago it was the practice in connection with certain students' associations to appoint "recorders" to watch the various branches of science connected with pharmacy, and to report to the Association any new discoveries or advancement in any particular subject; also to bring forward any new apparatus or exhibits of scientific interest. Mr. Lownsbrough pointed out that as each "recorder" had only one subject to watch there was a certain amount of rivalry between the different "recorders" as to which could bring forward the most interesting matter, so that scarcely a meeting passed without something new being brought under notice. Thus interest in the meetings was maintained all through the session.

Mr. **Frost** asked what procedure was followed in regard to the nomination of candidates for the Council. There was nothing in the rules to provide for nominations, Rule 4 simply stating that "the Council shall be elected at the annual meeting of the members. The voting to be conducted by means of papers which shall be issued by the Secretary, with full instructions." He thought it ought to be definitely stated when nominations should be sent in, and that due notice should be given to members by the Secretary.

The **President** said that any member was at liberty to nominate candidates for the Council.

Mr. **Frost**: Just so; but unless notice is given that nominations are to be in by a certain date members are apt to overlook the matter.

Mr. **Ffoulkes** said he quite appreciated the point raised. It had been urged that "new blood" was required on the Council, and Mr. Frost's point evidently was that an opportunity of getting new blood had been lost because members had not been notified that nominations must be sent in.

Mr. **Strother** suggested that Mr. Frost give notice that at the next meeting provision be made in the rules for nominations for the Council.

Mr. **Frost** then gave formal notice that at the next meeting he would move that Rule 4 be altered to read as follows:—

> 4. The Council shall be elected at the Annual Meeting of the members, after due notice has been given to members that nominations must be forwarded to the Hon. Secretary on or before April —— (date to be fixed). The voting to be conducted by means of papers which shall be issued by the Secretary, with full instructions.

The New Council.

The Scrutineers' report was then read, showing the following result:—35 voting papers had been received, the number of votes recorded for each candidate being A. Latreille 34, S. C. G. Tweedy 33, R. E. Lownsbrough 32, W. Matthews 30, J. W. Peck 30, C. J. Strother 30, E. Thompson 30, A. C. Franklin 29, W. Garsed 29, H. S. Coupland 26, A. B. Britton 25, D. C. Jones 24, H. Haylings 23, C. Hymans 23 (the foregoing comprise the new Council); F. Curry 22, P. Barker 21, W. Wendon 18.

On the motion of the **President** a vote of thanks was accorded to the Scrutineers.

The **President** then delivered his valedictory address, in which he briefly reviewed the work of the Association. He pointed out the disabilities under which the Council worked, showing that while twenty-four new members had been elected during the session twenty-seven old members had left London, and he asked members to do their best to induce their fellow assistants to join the Association, although numerical strength was no criterion of usefulness or activity. He concluded by thanking the Council and the Association for their support and help during the session.

A vote of thanks was accorded to Mr. Peck for his address and for his services in the chair during the past session.

The proceedings then terminated.

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION.

At a meeting of this Association, held on Monday, May 12, Mr. R. **Gledhill**, President, in the chair, a letter was received from the Secretary of the Bradford and District Chemists' Association stating that having further considered the question of the formation of a

Federation of West Riding Associations,

they approved of the scheme as suggested by the ex-President of the Dewsbury Association.

The **President** said he noticed that Barnsley had approved of the proposal, and expressed a hope that the scheme would be pushed forward. No communication, however, had been received from them.

Mr. R. **Broadhead** having given a report of the proceedings at the annual dinner of the Bradford Association, which he attended, it was decided, on the proposition of Mr. W. **Stead**, to send further letters on the federation question to Halifax, Wakefield, and Barnsley.

Mr. **Broadhead**, after commenting on the work of the session, proposed the following resolution:—

> This Council would be glad to know the opinion of each candidate for the Council election on the important question of the preservation of the title, in conformity with the 15th Section of the Pharmacy Act of 1868.

Mr. G. N. **Gutteridge** seconded the motion, which was passed.

PHARMACEUTICAL SOCIETY OF IRELAND.

The monthly meeting of the Council was held on Wednesday, May 7, at 67, Lower Mount Street, Dublin, the PRESIDENT, Mr. George D. Beggs, in the chair.

COMPOUNDING BY UNQUALIFIED PERSONS.

Replies were read from several institutions acknowledging the receipt of the Council's memorandum on the subject of compounding by unqualified persons and the sale of poisonous medicines and liniments in improper bottles. The Managing Committee of the Meath Hospital forwarded a copy of a resolution, which they had passed, stating that they "recognised the importance of the subjects mentioned in the memorandum, and were fully alive to the necessity of safeguarding the public in the dispensing of poisons, that they had long since taken ample precautions in the matter, and that they would gladly afford any members of the Council who visited the hospital an opportunity of satisfying themselves that that was so."

A letter from the Royal Victoria Hospital, Belfast, stated that in that hospital all the medicines were dispensed by duly qualified licentiates of the Pharmaceutical Society, and that poisons and liniments were only supplied in bottles intended for the purpose.

A letter from Steevens' Hospital, Dublin, stated that the subjects dealt with in the memorandum should have the attention of the governors of the hospital.

The reply of the secretary of Jervis Street Hospital said: "I am directed to thank your Society, and to say that the recommendations contained therein have been already acted on in this hospital."

The reply of the Royal City of Dublin Hospital, Baggot Street, stated that Mr. Wells, pharmaceutical chemist, was in charge of the compounding department of the hospital, and that the necessary steps had been taken with regard to the supplying of poisonous liniments in proper bottles both in the hospital and in the dispensaries.

A letter from the Royal Hospital for Incurables stated that the resident medical officer of that institution was a fully qualified medical practitioner, that under no circumstances were nurses allowed access to the dispensary, except for the purpose of removing medicines recently compounded, and that there were no students in the general hospital.

The reply from the Incorporated Dental Hospital stated that the memorandum had been laid before the governors and duly noted.

A letter from the Richmond, Whitworth, and Hardwicke Hospitals stated that the memorandum would receive the best attention of the governors.

RECOGNITION OF A BOTANY CLASS.

It was decided to grant the application of Mr. E. A. O'Keeffe, head science master of the Crawford Municipal Technical Institute, Cork, for the recognition by the Council of the botany class of that institution.

REPORTS ON THE EXAMINATION.

Reports from the examiners showed that at the recent Preliminary Examination there were 31 candidates, of whom 16 passed; that at the examination for the licence 23 candidates presented themselves, of whom 9 passed; that at the Registered Druggists' Examination one candidate presented in Dublin and 8 in Belfast, of whom 3 failed; and that at the Assistants' Examination 4 candidates came up, of whom 3 passed.

THE PRELIMINARY EXAMINATION.

It was decided that the Preliminary Examination shall in future be held on the first Tuesday and following day in January, April, July, and October, commencing at eleven o'clock a.m.; that both examiners shall be present during the two days; that the first day shall be devoted to papers, and the second to the oral examination, unfinished papers to be disposed of on the second day; that the examiners shall, for their own guidance and for the information of the Council, draw up a time table showing the time allowed for each subject, and that a fee of one guinea be allowed to each examiner for his second day's work.

The PRESIDENT moved the adoption of an addition to the regulations to the effect that the minimum percentage of marks should be required in all the sub-divisions. At present in the Latin examination the minimum percentage was 20 given for both translation and grammar combined, the result of which was that a candidate might get through whose knowledge of grammar was very defective. The effect of the amended regulation would be that the candidate would have to get at least 20 per cent. in both translation and grammar.

The President's motion was unanimously agreed to.

THE LICENCE EXAMINATION.

The PRESIDENT said that, as to the Licence Examination, the recommendation of the examiners was that the first day (Wednesday) should be exclusively occupied with papers, all of which should be given in on that day. That would prevent candidates engaged in writing answers to papers being taken away from that work to answer oral questions. Half of the following Thursday would be taken up with practical chemistry and the other half with practical pharmacy. The whole of Friday would be given to oral examination in all the subjects.

These recommendations were adopted, and a further resolution was passed appointing the examiners to act as inspectors on the first day, when papers are to be handed in.

PROPOSED SCIENCE DEGREE FOR PHARMACISTS.

The VICE-PRESIDENT brought forward a motion asking the Council to consider the advisability of applying to the Royal Commission on University Education in Ireland to provide a University degree in science for Irish pharmacists, but, on the motion of Professor TICHBORNE, the consideration of the subject was postponed for a month, and the Council then adjourned.

HASTINGS AND ST. LEONARD'S PHARMACEUTICAL ASSOCIATION.

The first annual dinner of this Association was held at the Castle Hotel, Hastings, on Wednesday, May 7, when the chair was taken by the PRESIDENT, Mr. F. Rossiter, who was supported by the Mayor of Hastings, the Vice-President of the Pharmaceutical Society, the President of the East Sussex Medico-Chirurgical Society, and several other medical practitioners.

The CHAIRMAN gave the usual loyal toast in appropriate terms, and expressed the appreciation of the members of the newly-formed Association in having Mr. Alderman Langham, the Mayor of Hastings, present at the inaugural dinner.

Mr. THARLE then proposed the toast of the

MAYOR AND CORPORATION AND OFFICIALS,

coupling with the toast the name of

Alderman LANGHAM, who said, in reply, that it was impossible to please everybody, but he had often expressed the opinion that it would be far better if capable men who stood outside the Council, and grumbled and growled, would come inside and help them to attain perfection. There were plenty of men quite capable of undertaking the civic duties who stood aloof. But there was one profession in the town that had set a good example—the medical men. They had several in the Council, and they had worked very hard and very successfully, especially in sanitary affairs, and had maintained and, indeed, enhanced the reputation of the place as a health resort.

Mr. John Smith proposed the toast of

Medicine and Pharmacy.

He said he regarded the trained medical man and the trained pharmacist as workers in the same field. As pharmacists they delighted in doing honour to the medical profession, for they knew it was a hard and arduous calling, and that its members lived and carried on their labours in the light of public opinion. He believed that, as a rule, it brought out the best in a man, and he thought that, as a profession, it stood high in public appreciation, and certainly no other came so close to the side of suffering humanity. The pharmacists, as they were aware, are a more modest body, not so often seen or heard, and bearing their trials with composure. But there were compensations even in their trials, as all who had their heart in their work knew well. He coupled with the toast the name of an esteemed medical man, Dr. Batterham, and their friend, Mr. Allen, well known as a most capable pharmacist and a member of the executive of the national association.

Dr. Batterham, in responding, thought that Mr. Smith might fairly have placed pharmacy in the first place in his kindly speech, which he (the speaker) much appreciated, for the work of the skilled pharmacist was closely allied to the practical side of medicine. Mr. Smith had alluded to the work of a distinguished pharmacist, Mr. Martindale. All medical men appreciated the latter's labours and owed him a deep debt of gratitude. The local medical men, he assured them, took a keen interest in the formation and development of that local Association, believing it would prove of great and mutual benefit. They wished it every success, and he was sure that social gatherings like the present would have professional advantages, besides promoting good fellowship among pharmacists.

Mr. C. B. Allen, who was most cordially received, said he had come away from a meeting of the Pharmaceutical Council, which had sent hearty greetings to that Association and wished it every success. He then proceeded to trace the early development of pharmacy, and gave a history of the various legislative efforts that had been made to organise pharmacy and protect the public from unskilled practitioners. Pharmacy, it had been said, was the outcome and offspring of medicine, but, as a distinguished pharmacist had observed, it was not the handmaid of medicine, but its wife. He then detailed the various steps taken by the old apothecaries of England to guard their interests, beginning with the first Act of Parliament, passed in 1511, and coming down to recent times, dealing with the present positions of affairs as it affected the individual chemist and druggist.

The Mayor, in proposing the toast of

The President,

spoke of Mr. Rossiter as being the right man in the right place, for he had known him for many years, and he knew that whatever he took in hand he did exceedingly well, as witness his work for so many years as secretary of the School of Art and Science.

Mr. Rossiter, in returning thanks, spoke of the excellent help he had received from members of the Association; from the Secretary, Mr. Stedman, Mr. John Smith, Mr. Edwards, Mr. Dawes, Mr. Ewbank Smith, Mr. Ripley, Mr. Tharle, Mr. Sidney Smith, Mr. Vint, and others. All had worked well and hard to make the organisation sound, and he believed there was every prospect of it being carried through.

Mr. T. D. Vint gave the toast of "Our Guests," referring to the wonderful progress in recent years in scientific pharmacy, and Mr. Rogers responded for himself and other friends from a distance.

LONDON CHEMISTS' ASSOCIATION.

A meeting of the Committee of the above Association was held at the Holborn Viaduct Hotel on May 14. About twenty members were present, and Mr. Albert Cooper presided.

The Chairman asked Mr. F. W. Truman, Old Kent Road, S.E., to give the Committee an account of the meeting held at Camberwell. Mr. Truman said that about forty attended, and all those who had not already joined the Association, did so, a local Committee of twelve being appointed. They also sent a resolution to the Chancellor of the Exchequer on the cheque duty, and as this had now been withdrawn it would appear that the resolution had not been without effect!

Mr. Albert Cooper paid an eloquent tribute to the memory of the late Mr. Frederick Andrews, 34, Leinster Terrace, W., who, he said, died somewhat suddenly at Epping the previous week. Mr. Andrews had taken an active interest in every movement which tended to improve pharmacy. He always inquired very carefully before he joined any movement, but, having joined, gave it his loyal support. He had, at one time, been a member of the Pharmaceutical Council, and pharmacy had lost a very good friend. He might also add that Mr. Andrews was a member of their Committee. He proposed a vote of condolence with Mr. Andrews and family.

Mr. C. J. G. Bunker seconded this resolution, which was unanimously carried.

The next matter dealt with was the date of the annual meeting. One of the rules stated that the annual meeting should be held in May, but the Secretary suggested that in this instance the rule must be broken, as it was now impossible to arrange for the meeting to be held in May.

Mr. Pickering proposed an amendment. Rules were rules, he said, and he suggested that the meeting should be held on May 29, but Mr. Pond pointed out that the Association, after all, was only in its infancy; not a full-grown child, and, perhaps, the rule might be broken on this occasion only. It was finally arranged that the annual meeting should be held at the Holborn Viaduct Hotel on June 18 at 3.30 p.m., and that a preliminary Committee should meet half an hour earlier.

A small Committee consisting of Messrs. Bustard, Burton, Truman, Cracknell, Pond, and Glyn-Jones, was appointed to draw up a report for the annual meeting.

Dealing with the financial aspect of the Association, the Secretary said that they were solvent. A little money was owing, but he had a balance of £10 to hand to Mr. Pond, the Treasurer.

It was subsequently decided that the whole trade of London should be invited to the general meeting, and that the meeting should be advertised in the trade press.

Mr. Bustard suggested that a resolution should be brought forward at the general meeting to the effect that the Pharmaceutical Society should be urged to take a test case into the Law Courts on the question of the right of companies to use the title "chemist," etc.; and he undertook to propose this resolution.

The Secretary asked that any members of the Committee who were not prepared to serve for the forthcoming year should give him due notice of such intention.

NEW REMEDIES.

Headache Powders.—Mix powdered acetanilide, 12 lb.; sodium salicylate, 1 lb.; sodium bicarbonate, 3 lb.; Rochelle salt, 4 lb.; caffeine, 2 oz.; saccharin, 5 dr. Divide into 5 grain powders.—*Spatula.*

Ointment for Eczema.—G. D. Reid recommends the following as a satisfactory ointment for general use in eczema:—Ichthyol, 60 gr.; salicylic acid, 5 gr.; boric acid, 20 gr.; hard paraffin, 20 gr.; soft paraffin, 1 oz.—*Bulletin of Pharmacy.*

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

ACTION OF CHLORINE ON LIME.

H. Oitz concludes, as the result of experiments, that the action of chlorine on dry calcium hydroxide should be expressed by the following equation:—

$$2Ca(OH)_2 + Cl_2 = CaO{\cdot}Ca(OCl)Cl{\cdot}H_2O + H_2O,$$

but that the water formed tends to react according to the equation:—

$$CaO{\cdot}Ca(OCl)Cl{\cdot}H_2O + H_2O = Ca(OH)_2 + Ca(OCl)Cl{\cdot}H_2O,$$

allowing a fresh quantity of lime to react with the chlorine. The presence of moisture in the lime (due to the water used to slake it) tends to give more importance to the second reaction, and the general result of these successive reactions may be expressed by the equation:— $2_nCa(OH)_2 + (2_n—_1)Cl_2 =$

$$(2_n—_2)Ca(OCl)Cl{\cdot}H_2O + CaO{\cdot}Ca(OCl)Cl{\cdot}H_2O + H_2O.$$

The composition of any sample of chloride should thus be comprised between the formulæ limits $CaO{\cdot}Ca(OCl){\cdot}Cl{\cdot}H_2O$ (35·32 per cent. of chlorine) and $Ca(OCl)Cl{\cdot}H_2O$ (48·96 per cent. of chlorine). Neither one nor the other of these formulæ can be accepted as the constitutional formula of the compound it represents. To decide on this constitutional formula the following facts must be borne in mind:—(1) The compound $CaO{\cdot}Ca(OCl)Cl{\cdot}H_2O$, stable at 100°, gives off oxygen at a slightly higher temperature, but no chlorine; the residue, $CaO{\cdot}CaCl_2{\cdot}H_2O$, only loses its water at a red heat. (2) The other compound, of which the formula is probably $2[Ca(OCl)Cl{\cdot}H_2O]$, when heated to 100° in a current of dry air, gives off chlorine and water.—*Zeit.f.Angew. Chem.*, **14**, 105, through *Chem. News*

SOLUBILITY OF ALKALOIDS.

Dr. R. A. Hatcher suggests the following method of determining the solubility of those alkaloids which do not readily dissolve in water:—Take 0·1 Gm. of the substance, rub with water to a smooth paste, and then with water until a smooth mixture of about 9 C.c. is obtained; to this add enough N/1 H_2SO_4 from a burette to convert the alkaloid into the sulphate, and then enough water to make 10 C.c. of solution; of this take portions of 1 C.c. each, and dilute in several proportions, to each add a slight excess of N/1 NaOH, and from the relative amounts of precipitate estimate the solubility; again, take several portions of 1 C.c. each and dilute to approximately the point of saturation, in one case using higher and in another lower dilutions; again, precipitate with slight excess of NaOH, and more accurately estimate the solubility. From a third series, using the second estimate as a basis, the solubility may be ascertained by taking the mean of the highest giving a precipitate, and the lowest giving none that is perceptible. Dr. Hatcher also suggests the application of this method for testing those alkaloids the solubility of which is known. Thus, morphine is soluble in 4,350 parts of water; and if 0·1 Gm. morphine be rubbed with water and then with enough N/1 H_2SO_4 to convert it into the sulphate and diluted to 10 C.c., and two portions of 1 C.c. each of this be further diluted to 43 and 44 C.c., including the requisite amount of N/1 NaOH to give a very slight alkalinity, a slight turbidity or precipitate should be found in the first and none in the second, from which is taken the mean or 1 part in 4,350, as the solubility of morphine. In the case of expensive alkaloids, 0·01 Gm. may be used instead of 0·1 Gm., but more accurate results will be obtained by using the larger quantity.—*Amer. Journ. Pharm.*, **74**, 134.

CLASSIFICATION OF THE RARE EARTHS.

Professor Bohuslav Brauner contributes to a recent number of the *Journal of the Russian Physical and Chemical Society* a paper on the position of the rare earths in Mendeléeff's periodic system of elements. After mentioning his experimental and theoretical work concerning the elements lanthanum, cerium, praseodymium, neodymium, thorium, etc., the author discusses the position of these elements in the periodic system, and the four different ways in which it may be attempted to place them in it. With Mr. Steele, of Melbourne, he comes to the conclusion that this group of elements represents a sort of node in the periodic system, between cerium and an unknown element which has the atomic weight of 180. This inter-periodic group is a continuation of the eighth series, which ends with the platinum elements; gold appears in such case as the first member of the ninth series, and not of the eleventh. In the twelfth series the first members are, probably, radium, thorium and uranium. This addition seems, in Mendeléeff's opinion, to deserve serious attention.—*Nature*, **66**, 66.

COATING PILLS WITH SUGAR.

T. S. Wiegand points out that many physicians of high standing and excellent judgment have ignored sugar-coated pills entirely, as the result of their experience induced them to think the process of sugar-coating "baked" them so thoroughly that they were nearly insoluble. Knowing this objection, it early became a problem with him to remove any cause of complaint arising from this coating process by excluding all heat from them while being coated, and the method of doing it was simply to drive a current of cold air into the pan while the pills were being covered with the sugar. Another reason—and a better one, in his judgment—why some sugar-coated pills were not so active was to be found in the fact that many of them contained less than half the quantity of the medicinal agent they purported to have—thus, in one instance, five 5-grain blue pills weighed with their sugar-coating little over 15 grains, while their medicinal component should have weighed 25 grains, and the sugar-coating would add almost as much more to their weight. He adds that the coating of pills must be done with such materials as will not be insoluble in the juices and acids of the stomach. The materials employed are gum arabic, starch, small quantities of wheat flour, and sugar in the form of syrup. A quantity of pills are placed in a "pan," which rotates in a very peculiar way, quite different from the confectioner's steam-coating pan, and a small quantity of syrup about half the density of simple syrup is poured on them; the whole mass of pills rolling in the pan soon becomes moistened, and while moist a quantity of gum arabic is thrown in, and a light coating of gum is thus given them; all unnecessary gum is removed, and the sugar-coating begins with an amount of syrup in which is mixed a little flour and enough finely-powdered starch to render it opaque. The pills soon become sticky, and form into a mass, which must be stirred rapidly by the operator to set them free, and then they begin to roll around in the pan each as an independent body; they must then roll until quite dry, when the process is repeated, each successive coat rendering the pill whiter and rounder. When they are well covered, then plainer syrup—that is, one containing less starch—is used, and as they become smoother plain syrup is used; after a time thinner syrup is used, and finally less and less will be required to moisten them. So fine a surface is at last imparted to them that 100,000 pills will become moist with the addition of two or three tablespoonfuls of syrup.—*Amer. Journ. Pharm.*, **74**, 33.

GIGANTIC GRASS SEED.

At a recent meeting of the Linnean Society, Dr. Otto Stapf exhibited several seeds of *Melocanna bambusoides*, a species of bamboo, which completely upset the popular idea as to the dimensions of grass seeds. In *Melocanna*, each distinct seed measures five inches in length and three inches in diameter, forming a massive pear-shaped body, which is totally distinct, as regards size, from any hitherto known grass seed. The great store of nutriment contained in this huge seed probably serves to support the newly germinated plant until such time as it has firmly established its growth and has pierced the dense growing jungle which is its habitat. Thus, probably, the reproduction of the species is more efficaciously effected by a few enormous seeds than by a very large number of smaller ones, which would produce weaker seedlings.—*Gard. Chron.*, **31**, 211.

FUSED LIME.

H. Moissan shows that, although lime is not fused by a mixture of coal gas and oxygen, or of oxygen and acetylene at a temperature slightly above 1,800°, the portion exposed to the highest temperature of the flame becomes covered with fine needle-like crystals of CaO. With a mixture of hydrogen and oxygen in a Deville-Debray blowpipe, lime is also refractory, although the temperature attained is near that of fusion, and the crop of crystals of volatilised lime is still more abundant. If, however, a mixture of exactly two volumes of hydrogen and one volume of oxygen be employed, the author finds that slight fusion takes place, the lime acquiring, in places, a wax-like appearance, which presents a crystalline structure on cooling. In an electric furnace with an arc of 300 ampères and 50 to 70 volts, lime may be readily fused and even boiled. With a stronger current, up to 1,000 ampères, the author has succeeded in melting 500 Gm. of lime in the cavity of a crucible itself composed of quicklime. After being fused for ten minutes, the surface of the cover of the crucible and the portions of unmelted lime become covered with a plentiful crop of crystals, some of which are cubical or in rectangular transparent parallelopipeds, others in fine needles, sometimes opaque and sometimes transparent, none of which, however, polarise light, but which, when mounted in Canada balsam and kept for six months, break up, and the fragments thus formed are strongly active on polarised light. Crystalline lime would therefore appear to be dimorphous. These crystals have a density of 3·4, although the pure lime from which they were prepared has the sp. g. 3·3. When graphite in excess is brought into contact with fused lime, calcium carbide and carbonic oxide are formed, while if the lime be in excess, the carbide formed is again reduced, metallic calcium is volatilised and a further portion of CO evolved. Silicium is oxidised into silica, and forms a basic silicate if the contact be prolonged, spheres of silicium, which have a markedly crystalline fracture when cold, are obtained. Boron melts in fused lime, and forms a borate; if the experiment is brief, the melted masses of boron are enveloped with crystals of calcium boride, CaB_6. These are covered with well formed crystals of basic calcium borate. Titanium is rapidly oxidised, and the lime is partially converted into basic calcium titanate, soluble in dilute acetic acid. Chromium is converted into well-formed crystals of the double oxide Cr_2O_34CaO. Manganese, nickel, iron and cobalt are all rapidly oxidised by melted lime, platinum is melted and diffused in the liquid, sometimes separating in large crystals on cooling. During the fusion considerable quantities of the metal are volatilised, being given off through small tubular fumeroles of molten lime. The same phenomenon was observed with iron, nickel, cobalt, and especially with manganese.—*Comp. rend.*, **134**, 136.

SPURIOUS CREAM OF TARTAR.

J. White describes a sample of spurious cream of tartar composed of an admixture of potassium acid tartrate, calcium superphosphate and rice starch, probably in the approximate proportions of 64, 31, and 5. The result is a combination, which, when titrated directly, gives an acid figure which calculated as $KHC_4H_4O_6$ indicates over 90 per cent. of that body. The opinion is expressed that in addition to direct acidimetric determination, the official test should include the alkalimetric titration of the soluble ash, which, as has been stated by A. H. Allen, should be exactly equivalent to the direct acid titration.—*Analyst*, **27**, 118.

ACTION OF H_2SeO_4 ON GOLD.

Pure selenic acid, obtained by decomposing lead selenate with H_2S and concentrating by evaporation, is found by Victor Lehner to be without action on gold in the cold. Hot concentrated H_2SeO_4 is found, however, to readily dissolve the metal. The action begins at 230° C., but proceeds more rapidly at 300° C., SeO_2 being evolved and Au_23SeO_4 formed. It occurs in very small yellow crystals, insoluble in water but soluble in hot H_2SeO_4, so that it may be precipitated from solution in that acid by the addition of water. The reaction is similar to that of H_2SO_4 on copper, and is the first recorded instance of the solution of gold in a simple oxy-acid.—*Journ. Amer. Chem. Soc.*, **24**, 355.

TUBERS FORMED BY BACTERIA.

The appearance of tuberous growths on roots of the Leguminosæ due to bacteria is well known. Noel Bertrand brings forward evidence to show that endophytic fungi are the cause of certain changes of considerable importance, and possibly occurring through a much wider range of plants. In the case of certain orchids, and *Ranunculus ficaria*, he attributes the formation of tubers to the stimulating action of these organisms. The lateral and terminal buds of *Orchis montana* are laid down in autumn; later on the buds swell and form tubers at their bases in which food is stored. During the period which intervenes between these two stages, roots arise from the base of the bud, and by these a fungus enters and invades the tissue of the bud. It is the coincidence of this invasion, followed by tuber formation, which suggests that the two are closely correlated. The infection generally requires to be renewed each year. Similar facts are recorded for *Ranunculus ficaria*, but the tuberous growth does not follow on for some time.—*Revue général de Botanique*, **14**.

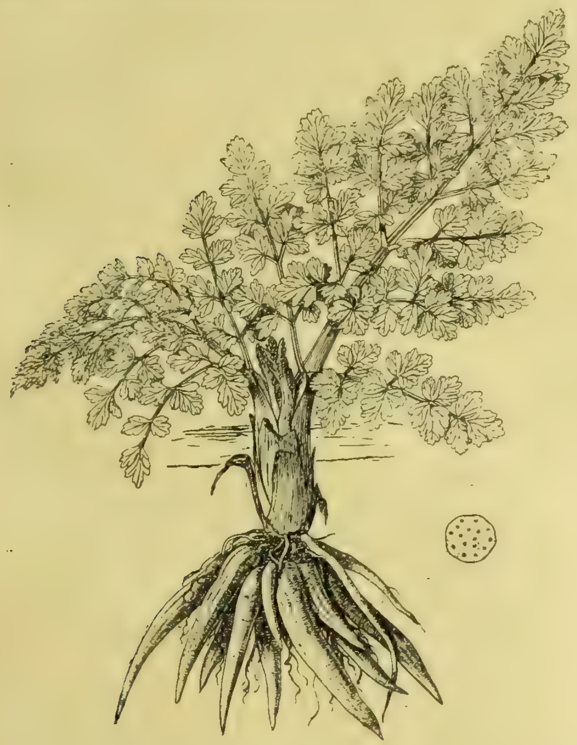
HETEROECISM IN ÆCIDIUM ELATINUM.

This fungus causes the silver fir to produce deformed shoots, generally known as "witches' brooms." The only reproductive cells which are formed on the fir are æcidiospores, and the problem arises whether the fungus forms uredo- and teleuto-spores, and if so, where? Edward Fischer has shown, and his results have been confirmed by Von Tubeuf, that the æcidiospores which appear on the fir in June will germinate on the caryophyllaceous plant, *Stellaria nemorum*, and produce uredospores during the summer. In the following spring teleutospores are formed on the stellaria plants, and these will infect the conifer, thus completing the life cycle. *Melampsorella caryophylleacearum*, by which name the fungus was known when living on stellaria, is thus shown to be a stage in the life history of *Æcidium elatinum*. The problem seems to have escaped solution before, because the mycelium can grow perennially on either plant for some time, and there is no need for the fungus to pass from one host to the other each year.—*Zeitschrift für Pflanzenkrankheiten*, **11**, 312.

ŒNANTHE CROCATA.

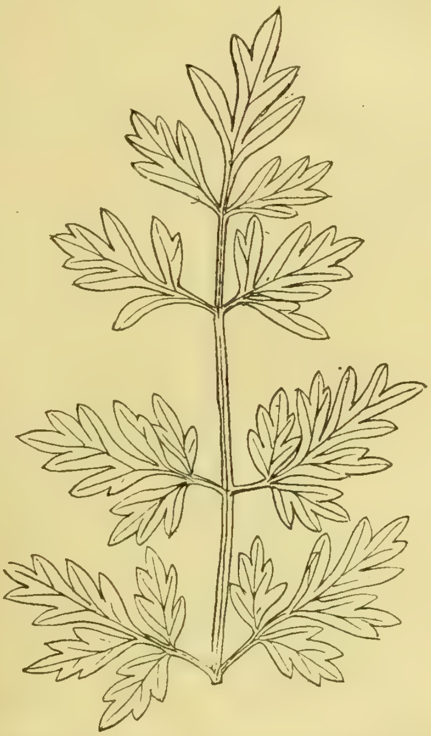
BY E. M. HOLMES, F.L.S.,
Curator of the Museum of the Pharmaceutical Society of Great Britain.

Since botany has ceased to be part of the medical curriculum of study, and field botany has been neglected for vegetable histology and physiology, the poisonous plants of our native country have had so little attention paid to them that medical men and pharmacists have apparently ceased to be familiar with them in their different stages of growth. This view is supported by the fact that within the last few weeks I have received two specimens of a root for identification, which in one case had proved fatal to animals, and in the other to a child who had eaten it. In the one case it was supposed to be celery, and in the other was reported in the newspapers as being the root of *Solanum nigrum*, the latter being an annual plant with a small fibrous, not fleshy, root, and whose poisonous principles are, to say the least, of a very doubtful character, since the leaves are used in the Mauritius as spinach and the berries are known to have been eaten without inconvenience.



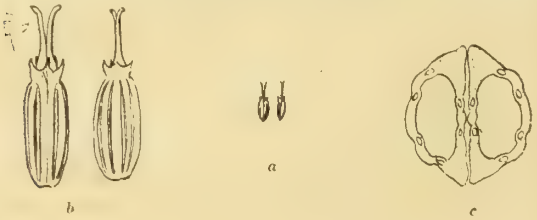
ŒNANTHE CROCATA.—Young plant, collected in April, and transverse section of full-grown root. Both about one-ninth natural size.

Under these circumstances, and as the illustrations of *Œnanthe crocata* are not so full as they might be, even in some of our best works on British botany, it seems desirable to give such a description and illustration that the plant may be easily recognised by those who do not take a special interest in botany. *Œnanthe crocata* is probably the most dangerous and most virulently poisonous of all our native plants. Dangerous (1st) because it is a common plant in ditches inland, and by the sides of streams, especially near the sea; (2nd) because in its early stages of growth, as during the present month, the leaves bear a strong resemblance to celery; and (3rd) because the roots have often been mistaken for parsnips, and are somewhat tempting in appearance, and not unpleasant to the taste, and have not any deterrent bitterness or acridity to act as a warning. It may be said to be the most poisonous, since even aconite does not cause death more quickly, and yew is only fatal under certain conditions, whereas *Œnanthe crocata* is known to have produced death in less than one hour, and destroys life even more rapidly than arsenic. (See Taylor, on Poisons.) Moreover, no antidote is known to the poison. Perhaps no other of our native plants has caused more cases of accidental death. Taylor, in his work on poisons, states that Dr. Dickells collected thirty cases of poisoning by eating the root, and he enumerates nineteen fatal cases, besides other cases that ultimately recovered. Dr. Cameron met with a case in which fifty-three cattle out of seventy-four died through eating the root. It is noteworthy that in this case the poisoning took place in April. This was probably due to the fact, as in one case which came under my notice, that the ditches are cleaned out at this time of year, and the white, fleshy roots are thrown up with the mud on the margin of the ditches. Although cattle, as a rule, do not touch the foliage of the plant when the flowering stem is fully formed, they would naturally not be familiar with the root, and might be tempted by its appearance. Most of the other cases of poisoning by human beings also occurred in the spring from March to April, when the leaves more closely resemble those of celery. The plant ought to be eradicated carefully, and the roots removed from every pasture field, and it should be a duty of the local authorities at seaside places to see that the plant is also removed from ditches or sides of small streams running into the sea, since it has often proved fatal to sailors landing for water or children rambling along the shore.

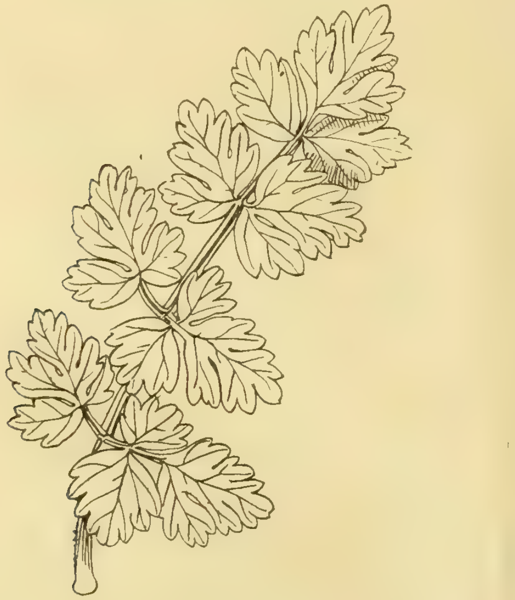


ŒNANTHE CROCATA.—Segment of upper leaf of flowering plant, natural size.

Characteristic Features.—In April the young leaves are just appearing above the ground, and are about six to eight inches long, and strongly resemble celery in general appearance. But celery has a tuft of small fibrous roots whilst those of *Œnanthe crocata* form a cluster, several of which are thick and fleshy and white, like those of a parsnip, from which they differ in tapering at the upper as well as the lower end, and being thus more spindle-shaped. These fleshy roots are three or four or more inches long and half to one inch or more in thickness in the middle in April, being about the size of the human finger, but later on in the year become larger, and more resemble dahlia roots in size. They are quite white externally, and on careful examination are seen to be marked longitudinally with depressed lines, so as to have a furrowed appearance, as if each fleshy root was made up of five or six smaller fleshy ones. On breaking the root across the impression is strengthened by the fact that the root, when partly dry, shows that it is separable into several pieces longitudinally, each of which has a dot indicating a central thread of vessels. As the plant acquires maturity the broken surface exudes tiny drops of milky juice which, on exposure to the air, turn of a saffron tint, and thus give a whitish surface covered with scattered reddish dots; hence the specific name *crocata*. For the ordinary observer it may be sufficient to say that if he finds a plant in the soft mud, by the side of ditches or streams in woods, or near the sea, which has a soft, white, fleshy root as thick as the finger, or thicker, tapering at both ends like those of the dahlia, and has leaves like the celery, it is practically certain to be this very poisonous plant. When in flower the umbels of white flowers, and the cylindrical fruits about the diameter of an ordinary knitting needle, and a quarter of an inch long, crowned with two styles or threads nearly one-third of the length of the fruit itself, form the most characteristic features, but at that period the leaves are less like celery in appearance, the much smaller wedge-shaped leaflets becoming more widely separated. If it be necessary to positively identify particles of the root for medico-legal purposes, the histological characters of the root have already been described by Mr. Jones, *P.J.*, [3], **16**, pp. 357-8.



ŒNANTHE CROCATA.—*a*, fruit, natural size, showing long style; *b*, ditto, enlarged; *c*, transverse section of fruit, enlarged.



ŒNANTHE CROCATA.—Pinna, lower leaf, natural size, collected in April.

The symptoms produced by *Œnanthe crocata* appear to vary somewhat with different people, and, according to the amount taken, usually coming on quite suddenly, and attended with convulsions, more or less paralysis of the lower extremities, dilated pupils, and in some cases delirium. The active principle is practically undetermined, but is known not to be alkaloidal, and no antidote is known. Emetics are usually given as soon as possible.

Dr. W. Halley has kindly furnished particulars of the symptoms observed in the case of the child recently poisoned by this root, which were as follows:—

> Within an hour or two of eating a whole root the boy, nine years of age, complained of thirst and dryness of tongue and fauces; he experienced nausea, followed by vomiting more than once. The boy, who had been walking along the river between Putney and Hammersmith, then collapsed, and "fits" supervened. The root is supposed to have been eaten between 1 and 2 p.m., and the child was first seen by me at 5. He was then cold and pulseless, the heart's action being very slow and feeble and intermittent. Both pupils were enormously dilated, and the conjunctivæ were insensitive to touch. The child was delirious and convulsed, the back being arched, the muscles of the face and arms twitching at intervals. The respiration was deep and stertorous, and ceased altogether for some seconds at frequent intervals, being what is termed "Cheyne Stokes' respiration." Death took place from heart failure before 6 p.m.

This description should be useful as a toxicological record, since there is no doubt in this case, as there so often is, as to the actual plant producing the symptoms. The root is used, in the form of tincture, of course in very minute doses, in the homœopathic treatment of some forms of epilepsy, where the symptoms are like those produced by this plant, and it has been used as an external remedy for suppurating wounds by herbalists in country places. Like digitalis, it seems not to produce poisonous symptoms when externally applied. The active principle of the plant, so far as chemical examination has gone, seems to show that that is not an alkaloid. The plant is sufficiently plentiful to be easily obtainable for chemical examination, and deserves both chemical and physiological investigation with the view of discovering an antidote to the poison.

THE TRAINING OF GERMAN PHARMACISTS.

BY AN ENGLISH STUDENT IN GERMANY.

The practice of pharmacy in Germany, as with everything else in that country, is regulated by the law in quite a fatherly way. It meets the apprentice on the threshold of his career, and does not forsake him when, as a fully-fledged apotheker, he has acquired permission to open a pharmacy of his own. As the whole educational system up to and including the universities is carried on and supervised by the State, the exact amount of education to be acquired by each individual is regulated according to the purpose for which he requires it, and the elasticity or individualism does not obtain such wide limits as in England.

The apprentice, that is to be, must have been educated in some school in which Latin is a compulsory subject—that is, in a Gymnasium or Real Gymnasium, which correspond, perhaps, somewhat to our better English grammar schools, including Greek, English, French, mathematics, and science among the subjects of instruction. He must also possess the certificate qualifying him for the one year voluntary military service (Einjährig freiwilligen Militärdienst). That certificate he obtains in the Untersecunda class. That is the only preliminary training required, but it is very thorough, and the main point about it is that it has all been accomplished while the youth is at school, so that when he begins business he is able to devote himself entirely to it. Having thus qualified himself, and being in good health, he enters on an apprenticeship of at least three years. If, on the other hand, he has stayed at school three years longer (until he is in the Oberprima), and has obtained the Reifezeugniss, which corresponds to a university matriculation examination, he is only compelled to serve a two-years' apprenticeship (Lehrzeit). The principal of the business is supposed to give the pupil lessons in the theory and practice of pharmacy. That is, of course, usually the case, for the apotheker is a man of good education, social position, and naturally takes a pride in his apprentices doing well. A very good book for directing the studies of the apprentice and giving him assistance is Schlickum's 'Die Ausbildung des Apotheker Lehrlings und seine Vorbereitung zum Gehilfenexamen,' which is said to be used fairly extensively, and is supposed to contain all that the apprentice is required to know. During the period of apprenticeship a journal (Laborations Journal) has to be kept of all the pharmaceutical work carried on under the supervision of the principal or the assistant, and it must also contain a short description of the operations undertaken and of the theory of the corresponding chemical processes.

Having served his apprenticeship, the would-be apotheker is now at liberty to enter his name for the Prüfung, or Gehilfenexamen, which qualifies him to act as an assistant. On entering his name for the examination, which is held four times a year in the same months as the English ones, the candidate has to send his certificate of qualification for the one year voluntary army service, a certificate from his principal as to the length of his apprenticeship, and his laborations journal. If these fulfil the requirements, his name is entered for the examination and the necessary fees paid. The Prüfung is divided into three parts—written, practical, and oral.

In the written part he is supposed to be able to express his thoughts clearly and correctly, and show that he would be fully capable of dealing with any of the materials which might be laid before him. Three things are given—(*a*) pharmaceutical chemistry, (*b*) botany or pharmacognosy, and (*c*) physics. The three exercises or questions are selected by lot from a given schedule, which appears to contain nothing but what an apprentice from a good-class dispensing business should know.

The practical part, which is intended to show that he has acquired the skill necessary for an assistant, consists also of three parts—(*a*) the reading, preparation, and pricing according to the legal price list of three prescriptions for various forms of medicaments; (*b*) to make an easily-preparable galenical and a chemical-pharmaceutical preparation of the German Pharmacopœia, and (*c*) to test the purity of two chemical preparations according to the directions of the P.G. For the last two sections schedules of substances which may be given are published.

For the third, or oral, part of the test the candidate has to submit a herbarium prepared by himself during his apprenticeship, and has to undergo a *viva voce* examination in every subject, to recognise fresh and dried plants, various drugs and preparations, and to show an acquaintance with the laws relating to the apotheke.

If the apprentice is successful in passing the examination, he is qualified to act as an assistant; if unsuccessful, he is sent back for some definite period, from six to fifteen months, before being allowed to repeat the test. If he fails at the second attempt he is not allowed to present himself again, but this is said to be very seldom necessary.

As an assistant he must spend three years in the practice of pharmacy, and two at least must be spent in Germany; the third may be passed in some pharmacy abroad (that is, outside Germany), but only in certain countries. At the end of that time he enters the University for the completion of his studies, and has to submit to a most thoroughly scientific curriculum, for which three semesters (eighteen months) are necessary. To finish the course in that period requires the closest application to work. The examination is usually taken in the fourth or fifth semester.

During his university course he is supposed to attend all the lectures dealing with his various subjects, and to put in practical work in every subject. In chemistry he has a long series of qualitative analyses to perform, beginning with simple mixtures, ascending to more complex, and finally ending with the analyses of minerals; he makes a few spectral analyses, and then goes on to his quantitative work. The volumetric consists of the usual methods, involving the principles of acidimetry, oxidation, idometry, precipitation, and some sugar analyses. The gravimetric includes the estimation of both constituents of various simple salts and various quantitative preparations, such as Ca and Mg. In pharmaceutical chemistry various pharmaceutical preparations are made, and foods, such as bread, milk, beer, coffee, etc., are qualitatively and quantitatively analysed for various metallic poisons. He has also to be capable of detecting impurities in the various materials used in pharmacy (Die Prüfung der Arzneimittel). During two semesters the physics lectures are attended, and at least one day a week spent in doing practical work. The study of botany and pharmacognosy is also thorough, both theoretical and practical work receiving attention.

Having finished the necessary work, the candidate presents himself for examination, which, as before, is written, practical, and oral. He is tested in all the branches of his studies, and in the practical part is usually given something to do which he has already done during the course. If successful in the examination he becomes a fully qualified apotheker, and is now qualified to keep a pharmacy. He is not permitted to do this when and where he likes, without let or hindrance, but must either acquire a business by purchase or else obtain the necessary licence to open a new one. The number of pharmacies is regulated by the State in proportion to population, and it averages perhaps one for every ten to twelve thousand inhabitants.

The law still continues to look after the apotheker and the apotheke. All the prices are fixed by a legal tariff, and they must be marked on the prescriptions in plain, legible figures. His premises are always liable to supervision by a Government inspector, who looks into the minutest details, sees that his drugs, etc., are pure, that his bottles are properly labelled, and that he has a proper stock of apparatus. If he neglects the orders of this official there is trouble in store for him which may even lead to the loss of the concession.

From the foregoing short sketch it is evident that the training of pharmacists in Germany is much more thorough than with us at home. The English Minor Examination is much better than the Gehilfenexamen, but that is only natural when we take into account the fact that the latter only qualifies a man to act as an assistant, while the former enables him to keep open shop. On the other hand, it may be doubted whether the Major Examination requires the training for it that the Apotheker Examination does. In attempting to copy the German system we must be careful to avoid the worst parts, for it does not seem possible that the English mind would take kindly to the hard and fast rules and policing. One point which seems to be of great interest and worthy of attention is that which requires the apprentime to have finished his preliminary learning before he leaves school. It seems, however, almost impossible to adopt that until some order is evolved out of the general educational chaos which obtains in England.

The writer of this short note wishes to thank Herr Apotheker [illegible] of Leipzig for kindly giving him much information, and to say that any errors in it are due to the writer alone.

PRACTICAL NOTES AND FORMULÆ.

White Vanilla.

W. L. Scoville states that a popular flavouring essence can be prepared from the following formula;—Vanillin, 30 gr.; coumarin, 15 gr.; glycerin, 2½ fl. oz.; alcohol, 3 fl. oz.; water, *q.s.* to make one pint.—*Bulletin of Pharmacy.*

Cosmetic Jelly for the Hands.

Macerate tragacanth, 60 gr., in rose water, 14 fl. oz., for two days, strain forcibly through coarse muslin, then add glycerin and alcohol, each 1 fl. oz., and perfume to suit. Use immediately after washing, rubbing in well until dry.—B. S. Cooban, in *Bulletin of Pharmacy.*

Foot Powder.

Mix finely powdered salicylic acid, 1½ dr., boric acid, 5 dr., and French chalk, 4 oz.—B. S. Cooban, in *Bulletin of Pharmacy.*

Label Varnish.

Macerate sandarac, 5 oz.; mastic, 2 oz.; Venice turpentine, 120 gr.; and camphor, 60 gr., in a mixture of oil of spike lavender, 1 fl. oz.; ether, 2 fl. oz.; and alcohol, 12 fl. oz. When solution is effected filter if necessary.—*Spatula.*

Bay Rum.

Dissolve oil of bay, 6 fl. dr.; oil of orange peel, ½ fl. dr.; oil of pimenta, ½ fl. dr., and balsam of Peru, ½ fl. dr., in alcohol, 4 pints, then add powdered orris root, 1½ oz., and macerate with occasional shaking for 48 hours. Next add one pint of water on each of four successive days, and shake the mixture occasionally for seven days longer. If a yellowish-brown colour be desired, add borax, 120 gr., with the last pint of water.—*Spatula.*

Syrup of Pine Shoots.

M. Schmitt recommends the following method of preparing this syrup, in preference to that of the Codex:—Macerate 100 grammes of pine shoots for three days in a mixture of 100 grammes of alcohol (60°), and 1,000 grammes of distilled water. Express the liquid, and allow to stand in the cool for twenty-four hours; decant and filter; add sugar in the proportion of 180 grammes for 100 grammes of filtrate, and dissolve with the aid of a water bath. Prepared in this way a limpid, aromatic syrup is obtained.—*Repert. de Pharm.* [3], **14**, 145.

Preparation of Mercury Tannate.

Zdarck finds that commercial mercury tannate is not at all constant in its metallic content. To obtain a compound which contains an approximately uniform amount of mercury, a mean of about 55·7 per cent., he recommends the following process: Freshly prepared mercurous nitrate, 20, is moistened with a few drops of water, and rubbed down to a very fine powder. Tannin, 12, in water, 20, is then added, and the trituration continued for half an hour. The insoluble product is then freely treated with water, and washed by decantation until free from HNO_3; the precipitate is collected, pressed, and dried at about 30° C. It is essential that the trituration should be continued for the time specified, or a basic compound containing an undue amount of mercury will be obtained.—*Journ. Pharm. d'Anvers*, **58**, 98, after *Pharm. Zeit.*

Nettle Hair Wash.

Fresh stinging nettles, crushed, 100 Gm., are macerated in a warm place with alcohol, 90 per cent., 2,000 Gm., for eight days, strained, and pressed. Then, balsam of Peru, 3 Gm.; oil of bergamot, oil of ylang-ylang, heliotropin, tincture of musk, of each 1 Gm.; otto of rose, 12 drops, are added, the maceration repeated for eight days and the mixture filtered.—*Deutsch-Amer. Apoth. Zeit.*, **22**, 74.

LETTERS TO THE EDITOR.

Division of the Minor Examination.

The *P.J.* leader of Saturday last dealing with the above subject contains some extraordinary statements which I feel should not pass without comment. Who, may I ask, has suggested lowering the standard of the qualifying examination? In his address to the students at Sheffield in October, 1900, Mr. C. B. Allen (Vice-President) advocated a division of the Minor, but in no way suggested a reduction of the standard. In my remarks at the Council meeting in March last I emphasised that no reduction in the amount of knowledge was desirable, and this was supported by other speakers. At the Newcastle meeting on the 7th inst., where a motion in favour of a division was carried by a large majority, the tone of the meeting favoured increased rather than relaxed stringency in the examination. After admitting that "the Pharmaceutical Council is virtually agreed as to the desirability of dividing the examination," you go on to charge persons who advocate it with selfish motives of the lowest order, and continue, "but since the public interest demands that only those who are thoroughly competent shall be registered as chemists and druggists the private interests of individuals must continue subordinate to that object." To this I would reply that thoroughness, and not superficiality, is the object we have in hand. We wish to encourage the student to make his studies systematic, to spread them over a longer period of time than he now does, and thus to ensure that theoretical and actual qualification shall be synonymous terms, which, unfortunately, at present is not always the case. Your representation of the position is such that it ought not to prejudice any thoughtful mind against the cause which division is to have in hand, and I cannot conceive of any philo-curriculist who will be so weak as to be pleased thereby.

Liverpool, May 19, 1902. Charles Symes.

It is evident that we have reached an important stage in the consideration of this question. I agree with the editorial remark (see *ante*, p. 419) that "careful study of the reasons assigned in support of that step appears desirable." We have an absolutely unanimous opinion in the Council, and also, I understand, in the Boards of Examiners, that the examination would be greatly improved by division. That means that there is a unanimous opinion that the present system of examination is, as Mr. Young puts it, wrong. There is probably a majority of the whole Council in favour of immediate division without waiting for a compulsory curriculum, although there was a majority of one against this at the particular meeting of Council at which the last vote was taken. I approach the subject from the point of view of one who believes strongly in a definite, controlled course of study through which each student should be required to pass before presenting himself for examination. I am entirely convinced that no effort should be spared to have such a course imposed on all candidates. But I think the division of the examination is urgently needed, apart from any consideration of that kind. That is to say, even if the present system of training is unavoidably continued for some time, division should take place at once. It will in no way interfere with the other question; or, rather, so far from hindering, it will greatly tend to hasten that object, and, in the meantime, it will secure better training and greater efficiency in the examination.

Let us look at some of the reasons for division. The first reason referred to is that taking so many subjects at once is unfair to the candidates. That is a very good and, I think, well-founded reason. In what respect is it unfair to the candidate? If examiners be asked they will state that compelling students to have so many subjects in their head at one time gives rise, even in the case of most intelligent and capable men, to exhibitions of almost incredible mental confusion. In this way it often happens that a good man is unable to do justice to himself. I have had many opportunities of watching candidates, and I am satisfied that mental confusion is a big factor in swelling the list of failures. At a recent examination there was a beautiful example. A very intelligent and really well-informed student was sent to materia medica. His first question was, "What is that specimen?" and he answered quite correctly, "Galls." The next question was, "Can you tell me what are the commercial uses of galls?" He immediately answered, "Yes; spiritus vini gallici." The examiner looked at him, and he immediately saw that what he said was supremely absurd. He recovered himself, and showed that he knew the correct answer perfectly, and he also explained what he thought had caused him to make such a blunder. He had in his head the information as to brandy taking tannic acid from the wood of the cask in which it is stored. In a moment of complete mental confusion he let that out. This is a sample of the almost incredible blunders that intelligent candidates are constantly making from the pressure of so many subjects at one time. If this mental confusion, due to congestion, could be got out of the way the results would be ever so much more satisfactory. The examiners are also frequently heard to complain that attempting to examine men in so many subjects at one time is unfair to them (the examiners). There are few things more trying to the nerves of a teacher or examiner than the constant blundering and stumbling answers of an intelligent student.

The present system is not only a needlessly severe strain upon the candidates; it is also a strain upon examiners. All this tends to inefficiency in the examination. Even if a candidate passes, he has been unable to properly assimilate the mass of varied knowledge he has been compelled to hold in readiness at one time. The result is that most of it is forgotten, and thus one of the main objects of examination is defeated. There is nothing very remarkable in a candidate passing in a subject one time and failing in it another time. That would probably continue even if the examination was divided. But there is truth in the statement that the present examination is too much a matter of chance. That feature should be eliminated as far as possible. It should be made as nearly a test of knowledge as an examination can be. A sensitive nature is demoralised by giving an answer during mental confusion which is speedily realised to be wrong and absurd. With some examiners the effect is much more pronounced than with others, for all have not the same tact. Herein lies the fatal chance. Duller natures, probably less well trained, are not so easily upset, and manage to sail into the harbour. This explains many of the surprising results of the examinations. These factors are present in all examinations. The Minor, as at present conducted, tends inevitably to greatly intensify them, and therefore it is unfair to those who seek registration as chemists and druggists, and should be amended by division. Thus the element of chance would be reduced.

As a reason against dividing the examination, it is stated that it would simply offer greater chance for incompetent candidates to pass by a mere effort of memory. It will be the fault of the examiners if that happens. The inducement or necessity for trusting to memory will be much less, and the natural tendency of division would be the very opposite of what you suggest. I think it is begging the question to put forward that reason against division. Besides, division would almost certainly lead to better means of education. Teachers tell us that it is impossible to do justice to the work under present conditions, because students have to keep up so many subjects at the same time. Taking the examination in two stages would in itself secure better education. It is further stated that division is suggested as a modification, with a view to allowing candidates to pass more easily and to give them a greater chance of getting through. I do not believe anyone puts forward that reason. I think the reason referred to would be more accurately described if it were said that "Modification by division is desired in order to allow candidates to pass more satisfactorily and to have an assurance that if they know their work intelligently they will have a reasonable certainty of passing." Everybody will agree with the statement that "Everything that is reasonable should be done to reduce the large percentage of failures." I have never heard anyone say the failures should be reduced by lowering the standard of the examination, nor have I heard anyone suggest that this should be done in order to get cheap labour. The latter is a phantom. But in any case both these reasons are unreasonable, and could never be seriously entertained. Though a piecemeal examination may prove altogether insufficient as a test of qualification, it need not prove so, and it can very easily be prevented from doing so. Were the examination divided to-morrow, there is no reason why it should be less a test of qualification than the existing examination, and it would give a chance of better training, which the present system makes almost impossible.

There is no doubt that what we want is some evidence of training as a guarantee of real fitness. All will agree with Mr. Hills in that who have really studied the matter. The difference of view is as to the road by which we are to reach the goal. Some appear to think that by tacking a curriculum on to the movement for division they will be able to use the desire for the latter as a lever to press forward the former. As one who strongly desires a curriculum, I entirely differ from that view. It is one which I think simply blocks all chance of speedy progress. On the other hand, we have to remember that the action of the Council in remodelling the examination schedules during recent years has led to a very great improvement in the training of candidates. There is now, as a result of the Council's policy, a very much more systematic course of education in all the pharmacy schools throughout the country. The way has to a large extent been opened up for the institution of a proper curriculum. The one great obstacle is the existing admittedly unsatisfactory way of conducting the Minor Examination. If only it were divided in a rational way the courses of instruction in the schools would also be put on a rational and truly scientific basis, and after that had been accomplished it would be an easy and natural step to a recognised and imperative curriculum. It has been said that the Council cannot divide the examination without further powers from Parliament. It is alleged that the Privy Council has declared that this is so because no precedent condition can be imposed on intending candidates. But we can have division without imposing any precedent condition. I think it was Dr. Dobbin who said that we could give candidates an option either to take the whole examination at one sitting or two. Giving an option is a very different thing from imposing a condition, and if the option were given it would be very easy to provide for all who would choose to take the Minor all at one time.

The manner of dividing the examination is important. The most rational way would be to have an examination in the science subjects—botany and chemistry (including physics)—as the first part of the Minor. This would not only clear the ground, but would lay a foundation for the next and final examination, which should include the technical subjects—materia medica, prescriptions, and pharmacy (practical and oral). It would be an immense gain to the student to get the science subjects strictly as such, and without having his head muddled with their technical applications, as at present. He would then be free to study their applications intelligently for his final examination. The entire reservation of the technical subjects to the final examination would also prevent anyone who had only passed the first examination having any exalted notion that he was half a pharmacist. At present candidates attempt to get up both the science and the technical subjects *pari passu*, with the result that they learn neither satisfactorily. I am sure a compulsory curriculum is only a matter of time. As a strong believer in its necessity and advantage to the student I would advocate immediate division of the Minor as a means of shortening the period between us and the attainment of that most desirable consummation. I am not sure if it is still held that the Council cannot institute a curriculum without fresh Parliamentary powers. It does not seem clear that the Privy Council still adheres to the objection that we are not entitled to impose precedent conditions on candidates. If they do, then I want to ask them how they have allowed us for so many years to impose the precedent condition of three years' practical experience in dispensing. The Charter and the 1852 Act put all the subjects of examination on the same footing. There is no difference in principle between requiring a certificate of practical experience in chemistry or evidence of systematic instruction in any of the subjects of examination and this certificate of experience in dispensing. Then we have also the precedent condition that candidates must have attained the age of twenty-one years. I am inclined to think that if the matter were fairly put before the Privy Council they would see that a curriculum is quite within the power of the Council as a reasonable method of making sure that the candidates have a knowledge sufficient to satisfy the examiners.

May 17, 1902. "Curriculum" (135/25).

It seems to me that both the correspondents who write on the above subject in this week's Journal are fighting a phantom of their own creation. I have not heard of anyone advocating a reduction in the standard of the examination, or that candidates should go up a second time only for the subjects in which they had failed on a first attempt. Neither has it been suggested that in the examination as now conducted the examiners are not fair to the candidates. The objects aimed at by the proposed division are that the acquirement of the special knowledge shall be spread over a longer period of time, and should be more thorough than at present, and that the percentage of failures should be considerably reduced thereby. Why gentlemen who admit having had several tries before passing should object to this I fail to understand.

London, May 17, 1902. "Division" (135/26).

The Strength of Easton's Syrup.

Looking through the Journal just to hand, I note Mr. Gadd's correction (p. 403) of a published statement as to the strength of this syrup, and am impelled to send you the attached label, on which a well-known firm claims for their make that each fluid drachm contains two grains of phosphate of iron. If the claim be well founded, is the departure from the usual strength advantageous?

Dover, May 9, 1902. J. F. Brown.

Citrine Ointment.

It is unnecessary to reply further to Mr. Maben's assumption that an ointment which keeps well must necessarily be "exceedingly acid." That point has been already dealt with in my former notes. Mr. Maben now asks me to account for his figure "2·1 per cent. of acid," but as he has not stated how it was obtained, it is somewhat difficult to do so with certainty. I may mention that I have not adopted any theory with regard to the state of the mercury in the ointment. It has generally been assumed to exist in the state of mercuric nitrate, and hence presumably the name given to it in the British Pharmacopœia. It was in connection with Mr. Maben's statement, "Citrine ointment always contains free acid," that I called attention to the percentage of acid which corresponds with mercuric nitrate. I may now add that 2·1 per cent. would correspond very closely with mercurous nitrate.

London, May 14, 1902. P. W. Squire.

Solubility of Turpentine in Glacial Acetic Acid.

In reply to Mr. Dunlop's statement that he would not, without my authority, apply the temperature given in the article on "solubility" to both solids and liquids alike, I would suggest that the close range of temperature indicated for a solid dissolving in a liquid would apply with equal if not greater force to the mixture of two liquids by volume, unless otherwise indicated. The time, three days, is not equally applicable, for the solid requires some time to dissolve, whereas the liquids mix at once. He claims to have demonstrated that B.P. glacial acetic acid mixed with an equal volume of oil of turpentine will not remain so mixed for three days, but I have carefully read Mr. Dunlop's paper (*P.J.*, April 26, 1902), and cannot find any such demonstration. He there states that a turpentine oil was dissolved in glacial acetic acid at one temperature, and separated out again on a fall of temperature. He quotes no experiment in which solution had been effected at 15·5° C. and separation had taken place simply on standing three days at the same temperature, and it is quite contrary to my experience. I have repeatedly had occasion within the last few years to test the miscibility of these two liquids, when supplied to me in the ordinary course of business, and have not met with an instance of separation such as he suggests. Mr. McDiarmid, in commenting on Mr. Dunlop's paper, confirmed the statement given in the 'Companion' that oil of turpentine is soluble in all proportions of glacial acetic acid.

London, May 14, 1902. P. W. Squire.

The Sedum Family.

The name of this family is suggestive, for the plants sit patiently on during the extremes of heat and cold, like Mark Tapley, under circumstances of adversity. Bentley enumerates thirteen British species. The most frequent are *S. tectorum* and *S. acre*, possessed of very opposite qualities. The former plant enjoys a curative reputation amongst old wives and herbalists. Since the introduction of slates the sight of a red-tiled cottage covered with this sedum has become rare—at least in the neighbourhood of populous towns. Sixty years since it added very much to the picturesque beauty of many a roof in the Lake District. When pedestrianising in company with a brother pharmacist (since deceased) we admired a fine display on the roof and outbuildings of a farmhouse. The tenant, an aged, but hale and hearty lady, of primitive manners, volunteered the information that a building was thereby protected from thunderstorms, and that "this very house was saved by its intervention. In my grandfather's time the lightning struck the roof and turned the thunder-flower all to a jelly—but the house was saved, and that's why it is called thunder-flower." Some twenty years after, when travelling on the Continent, this sedum was noticed growing abundantly upon many a housetop in Belgium, where it was known as "Dunderblomen"; at Arras, in France, it was styled "Fleur de tonnerre." It is remarkable that this humble plant should be thus recognised in places so remote from each other, and it might be of interest to lovers of plant-lore to investigate the subject, and if possible trace the extent and origin of the legend, which may date from remote antiquity. With a view to ascertaining something about the properties of the plant, I obtained, through the kindness of a friend, 24 ounces, which by pressure yielded 12 ounces of juice. On standing, it deposited chlorophyll, which rapidly assumed a dull brown colour, the supernatant liquid being nearly colourless. Evaporated, the product was 2 ounces Avoirdupois. During evaporation an odour resembling raspberries was perceptible, and was thus designated by four individuals. The taste is decidedly astringent. The juice is blackened by tincture of ferric chloride, but there is no precipitate. A preparation called "Cingreen ointment" is in repute with herbalists as a remedy for scalds, burns, and broken chilblains. I have made inquiries respecting the use to which this plant has been employed, but have failed to gain more than a vague impression that it is good for burns—no one cites a case. Referring to Dr. Withering, under the term "Semper vivum," he says:—"The leaves are said to be cooling when applied externally and frequently renewed." This idea appears to be fallacious, the properties of the plant being astringent. An ointment made by triturating ʒi. of the extract with ℥i. paraffinum molle greatly relieved a case of prolapsus ani attended with hæmorrhoids.

Deal, May 15, 1902. R Goodwin Mumbray.

The British Botanic Garden.

The advantages of a garden so laid out that it provides suitable habitats for all the species of plants native to the British Islands are at once so apparent to all botanists and lovers of Nature generally that an enthusiast might be excused for thinking that when such an opportunity is provided for acquiring an accurate knowledge of these plants and for studying the science of botany in so far as the rich and varied flora of these islands supply the material for doing so, it will at once meet with sufficient pecuniary support to enable him to carry it on efficiently. Such a garden was formed at Perry Hill nearly three years ago, and the promoter has given the greater part of his time to the stocking it with all kinds of British flowering plants, ferns, and their allies, and has done nearly all the necessary labour attending the undertaking, having had little assistance except during the actual laying out of the ground. Moderate support was accorded by the inhabitants of the neighbourhood at first, but was never at all equal to the outlay, and has now so diminished that it is necessary that the advantages of the garden be made more widely known in the hope of obtaining a larger number of subscribers. At least a hundred subscribers of five shillings per annum are required to meet the necessary expenses, and the scope of the garden can be extended so as to include many plants not natives of Britain if subscribers so desire and funds are available. The garden can best be reached from London by the South-Eastern Railway to Catford Bridge Station, thence by omnibus or by about fifteen minutes' walk to Castlands Road, in which it is situated. The promoter will be in attendance on most days from two p.m. till dusk, and always on Saturday afternoon and evening, as being the most convenient time for the public generally. A key will be supplied at cost price (about 6d.) to every subscriber, so that admission may be obtained at any time. The above is respectfully submitted to botanists and others in the hope that they will think the project deserving of their support and enable the garden to become a complete success.

13, Marlowe Road, Anerley, S.E., Philip Cochrane.
May 17, 1902.

The Council Election, 1902.

On looking into the matter of the geographical distribution of the present members of Council, I notice that while Lancashire alone has four and London eight representatives, the whole of the very large and important district of the South and West of England (omitting Salisbury), has but one solitary member, namely, Mr. Park, of Plymouth. That fact alone is sufficient reason for asking for a vote in his favour not only from our friends in London, Lancashire, Wales, etc., but especially from West of England chemists, who, by his rejection, looking at the matter from the point of view of territorial representation, would be totally disfranchised. We, who have been intimately associated with him for many years, know the large amount of time and attention he has given to his duties, how intimately he is in touch with our needs, and that as a retail chemist in ordinary business he fully realises the exigencies of the present position of our calling. I may add that at a recent very largely attended meeting of our Association, a vote of thanks was accorded him for his past services, and it was decided to ask chemists generally to support him at the forthcoming election. Thanking you for the favour of the insertion of the above,

C. T. Weary, *Divisional Secretary.*
President of the Plymouth, Devonport, Stonehouse and District Chemists' Association.

Devonport, May 19, 1902.

The Naylor Testimonial Fund.

I wish to draw the attention of readers of the Journal to the Naylor Testimonial Fund, which it is intended to close at the end of the present month? An amount of about £120 has now been collected, and a large number of subscribers have availed themselves of the opportunity of showing their appreciation of the services rendered by Mr. Naylor during the long period that he occupied the position of senior Honorary Secretary to the British Pharmaceutical Conference. In order to facilitate the arrangements for the presentation, which it is intended shall take place at Dundee, any further contributions should be forwarded at once to the Hon. Treasurer, Mr. J. C. Umney, 50, Southwark Street, London, S.E.

Hitchin, May 17, 1902. F. Ransom.

Pharmacopœia Revision.

The tone of Mr. Abraham's letter in your issue of last week is so courteous and withal so fair that it is a pleasure to reply to it. The first point he raises against me is that I was contributory to the misunderstanding, inasmuch as the title I placed at the head of that section of the article in dispute was misleading, and in strictness it must be admitted he has some grounds for his complaint. It may, however, be pleaded that titles of articles are not always exactly indicative of what is contained therein. A concise and terse title is generally to be preferred to a longer, though perhaps more exact one, and in choosing the title, "Solids by weight, liquids by measure," I did so on account of its familiarity, rather than for its exact relevancy to the matter which followed it. Thus far I concede the points to Mr. Abraham, but when he goes on to contend that the phrase, "Solids by weight, liquids by measure," is "neither a written nor an unwritten law," I at once join issue with him, though the discussion must necessarily be more or less of an academic nature, and, therefore, of but questionable value to practical pharmacists. How then are we to define the term "unwritten law"? Is it not a guiding principle—definite and concrete, destitute of legal status, yet through sheer use and want fulfilling in the absence of an acknowledged law the functions thereof, and receiving the obedience due to a legal enactment? Now Mr. Abraham cannot deny that a custom does prevail in pharmaceutical circles of interpreting the signs for ounce and drachm as meaning by measure in the case of liquids and by weight in the case of solids. Neither will he deny that pharmacists act rightly in obeying this "unwritten law" in the absence of distinct instructions to the contrary.

The Pharmacopœia does undoubtedly take up a distinctly different position, for in the absence of the prefix "fluid" an ounce of a liquid in an official formula means an ounce by weight. Though done with good intentions, it might, however, be reasonably argued that in adopting this method the Pharmacopœia authorities drifted into a false and somewhat illogical position, for whilst they compel the pharmacist when making certain galenicals to interpret the word "ounce" as meaning by weight, they know quite well that in dispensing the same galenical he will be compelled to interpret it as meaning by measure. Mr. Abraham's contention is that, for the present, the only adoptable method is the most convenient one, and though I heartily agree with him so far as general principle is concerned, I fear, when we come to details we would drift apart, because it would in almost every case depend upon the quantity of a galenical required, whether weighing or measuring would be the more convenient method to adopt. In wholesale quantities weighing liquids is in almost every instance to be preferred, but if we take the quantity which the average pharmacist would require for his own business there are instances where the reverse is to be preferred. Now, Mr. Abraham is looking at this matter solely from his own point of view, forgetful of the fact that the fine pharmaceutical business over which he presides is far above the average, and that the quantities of galenicals which he makes would be more correctly described as wholesale rather than retail. The pharmacopœial formulæ ought, however, to be constructed with the intention of suiting the requirements of average pharmacies, because the book is intended to be a guide for the retailing and dispensing of medicinal preparations, wholesale establishments being non-existent so far as the Pharmacopœia Committee is concerned.

It seems I owe Mr. Abraham an apology for crediting him with using the words "never heard" instead of "never remember seeing" anent the use of powdered nux vomica in medical prescriptions. I tender the apology, and along with it congratulations on his skill in verbal "hair splitting." I will not, however, follow him in this, because, in common parlance, "the ice is perilously thin." There may not be the slightest necessity for physicians ordering powdered nux vomica, but what I hold is, that when the authorities considered it worthy of a place in the Pharmacopœia and attached a dose to it, thereby showing that they expected it to be prescribed, and did not give it a place merely because of its being the source of strychnine and the nux vomica galenicals, they were morally bound, provided no insuperable difficulties stood in the way, to fix a standard percentage of strychnine and give an assay process as is done in the case of its galenicals.

Edinburgh, May 19, 1902. W. Lyon.

Wanted—A Divisional Secretary.

I find that at the last meeting of the Council attention was called to the fact that Norwich is without a Divisional Secretary. Who is responsible for this? It seems to me that the officials of the Society should see that its members enjoy all the privileges to which they are entitled. No chemist can very well put himself forward as a candidate for the position and, therefore, nothing is done. I should suggest that the Registrar address a circular to each chemist in the division asking for a nomination by a certain date. When these are returned he should then place the matter before the gentleman who is nominated by the greatest number, who would, no doubt, give it due consideration, and, if backed up by a good number, consent to serve. We want a man who is familiar with the general run of business, can see the difficulties under which we labour, and, if possible, find means for their removal.

Norwich, May 20, 1902. "Norwich Chemist" (135/35).

A Warning to the Benevolent.

In the Journal of January 25 last I had occasion under this heading to point out that, on more than one occasion, correspondents had called my attention to a person who professes to be Mary Masters—a widow of a member of the Society, and who then appeared to be working the chemists of the eastern counties for compassionate trifles till she could get assistance from the Benevolent Fund! I am sorry to say she is still practising the same form of imposture, having been last heard of in London. Any person on whom she attempts to impose would be doing good service by handing her over to the police and communicating with me.

Richard Bremridge,
Secretary, Pharmaceutical Society.

17, Bloomsbury Square, W.C., May 21, 1902.

REPLIES TO CORRESPONDENTS.

Resin in Oils (W. E. H.—74/1).—Consult Allen's 'Commercial Organic Analysis,' volume 2, part 1.

Liquid for Thinning Printer's Ink (L. W. W.—73/33).—It appears to consist of ordinary spirit of turpentine, to which a small quantity of oil of cloves has been added.

American Journal (W. M.—73/31).—The *American Journal of Pharmacy*, published monthly; subscriptions (3 dollars per annum) should be addressed to the business manager, F. Yaple, 145, North Tenth Street, Philadelphia, Pa., U.S.A.

Green Stain for Wood (G. C.—73/34).—It is best to buy a suitable stain ready for use, but you can prepare one by dissolving verdigris in vinegar, or copper sulphate in dilute ammonia solution. Solutions of green aniline dyes are also used for the purpose, picric acid being sometimes added in order to vary the shade and fix the dye.

Pharmacology (J. D.—135/29).—The term has been employed as you suggest, but is now more specifically used in the same sense as pharmacodynamics, *i.e.*, the action of drugs on living organisms. The other terms you mention are also commonly used in a specialised and restricted sense.

Special Notice to Correspondents.

All Communications for the 'Pharmaceutical Journal' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should arrive not later than Wednesday morning.

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LONDON: SATURDAY, MAY 24, 1902.

THE REASONS FOR A CURRICULUM.

The intimation, officially conveyed to the Council at the April meeting, that special attention should be directed to Dr. Stevenson's remarks as to the necessity of establishing compulsory courses of instruction in connection with the qualifying examination, may fairly be regarded as a most important step in regard to a subject which has hitherto been discussed more or less from an academic point of view. As to the purport of Dr. Stevenson's remarks on this subject, in the report particularly referred to, there can be no difference of opinion. It is in accord with the opinion emphatically expressed on many previous occasions, by himself and by others who have acted in the same capacity, that for acquiring the knowledge requisite for statutory qualification systematic study is indispensable. Since that opinion has been formed as the result of extended practical experience of the examination, and since it is an expression of what is held to be necessary for the purposes of the Pharmacy Act, it furnishes a very strong reason for the adoption of a suitable curriculum. Speaking from a public point of view in reference to the daily routine of the chemist's business, Dr. Stevenson states that the safety of the public imperatively calls for competence in practical pharmacy and practical chemistry. A similar conclusion is to be arrived at by considering the object of examination, as well as the nature of the competent practical knowledge that persons known as chemists and druggists are expected to possess. If such knowledge is not requisite for the particular kind of business which some candidates for qualification may intend to carry on, that circumstance should not be admitted as a reason for reducing the efficiency of the examination.

The facts mentioned in Dr. Stevenson's report as to frequent failures in the practical parts of the examination show that many candidates are lamentably wanting. If that circumstance justifies the inference that the ordinary conditions of apprenticeship do not enable the chemist's apprentice to acquire the knowledge necessary for qualification, the necessity of establishing a curriculum is evident, not only in the public interest, but also in the interest of qualified chemists as well as candidates themselves. Unless the qualification has a real meaning, in regard to technical competence, the incidental protection it may be expected to afford would be lost and, while duly qualified chemists would be at a disadvantage, there might be some excuse for the opinion that the only effect of the Act is to create trade monopoly. Even the desire recently expressed for division of the Minor Examination may be regarded as a reason for requiring candidates to pass through a definite course of study before being admissible for examination; for it must be remembered that when the subject was carefully considered, some years ago, a curriculum was foreseen to be a necessity sooner or later, but division of the examination was considered to be only an incidental feature of that arrangement, consequent upon the longer period over which study would be extended for the purpose of acquiring knowledge that would be permanently retained. In short, the establishment of a curriculum would be a realisation of one of the primary objects of the Society, the one which, in fact, underlies all its other objects. It was objected to, in 1882, as involving division of the examination and, for the same reason, it should be supported now as the most natural mode of securing a divided examination.

One of the most cogent reasons for requiring that candidates for qualification should have gone through a course of study is to be found in the fact that the necessity of passing the examination has not had the effect of inducing candidates to prepare themselves for it in that way. That expected influence of the examination system has not been realised, and the forced method of hurried and more or less superficial preparation too frequently adopted is the real cause of the terror with which the examination is regarded by many. Those who succeed in getting through by such means cannot be in the same position as a student who had acquired a sound practical knowledge of the subjects of examination. They would more probably betray deficiency in the manner recently referred to by Mr. Abraham as being the case with some persons who have passed the qualifying examination. The not infrequently expressed opinion that qualified assistants are found unsatisfactory may be accounted for in that way. It is in any case a serious reflection, and when the statement is coupled with an admission that existing arrangements are unequal to imparting to apprentices a thorough knowledge of their business a very strong case appears to be made out for adopting such an effectual remedy as would be afforded by an enforced course of study as a condition precedent to being admissible to the qualifying examination under the Pharmacy Act.

ANNOTATIONS.

"The Standard of the Qualifying Examination" is a phrase often made use of as though it represented a readily adjustable measure by which the relative scientific knowledge of candidates could be ascertained and regulated as desired. But a more correct view would be to regard it as a fixed gauge, test, or criterion, set up as a unit of reference for ascertaining whether candidates for qualification under the Pharmacy Act possess the knowledge requisite for being registered. In that sense the greater or less stringency of the examination is not of so much importance as its efficiency for distinguishing between candidates who possess knowledge and those who do not possess it, or who, in some cases, may not desire to possess it. That such a test may sometimes fail to serve its purpose, by admitting to registration persons who by chance happen to be able to answer the particular questions put to them, though they do not generally possess the required knowledge, is conceivable, but the converse is very much less probable.

The Minor Examination is also frequently regarded as an examination in several subjects, but strictly speaking it is simply an examination in pharmacy, designed to test a candidate's fitness to be trusted with the sale of poisons and to compound the prescriptions of duly-qualified medical practitioners, as witness the provisions of Sections 1 and 3 of the Pharmacy Act, 1868. Apart from the chemical knowledge which it is essential that a compounder of medicines should possess, a candidate is expected to be familiar with the physical characteristics of poisons and other substances used in medicine, as well as able to interpret physicians' instructions accurately, but those facts do not justify the description of the test of qualification in pharmacy as an examination in several subjects. It is at most an examination in pharmacy only, and within the pages of the British Pharmacopœia is included the vast bulk of what a chemist and druggist is required to know in order to satisfy statutory requirements. A preliminary knowledge of English, Latin, mathematics, physics, chemistry and botany is of course requisite, but the candidate for examination who has made himself properly familiar with the contents of the British Pharmacopœia need concern himself about very little else in order to prove his fitness to practise pharmacy and so secure registration.

There is Nothing Paradoxical about the foregoing statements, strange though they may appear on first consideration, since careful study of the Minor examination syllabus and a little reflection will show that the law simply requires a chemist and druggist to possess such a thorough knowledge of the characters of substances used in medicine as will enable him to compound them in a manner consistent with a proper care for the public safety. That thorough knowledge, naturally, renders chemists and druggists the fittest individuals to retail and dispense medicinal substances, apart from the compounding of physicians' prescriptions, and thereon also rests their claim to be regarded as the only proper persons to undertake the distribution to the public of those potent substances classed as poisons. The whole subject is well summed up in the preamble to the Pharmacy Act, 1868, wherein it is stated to be expedient for the safety of the public that chemists and druggists should possess a competent practical knowledge of their business, as proved by examination. The examiners are empowered to test a candidate's knowledge of various branches of knowledge, but merely as means to a definite end, *i.e.*, in order to prove his competent skill and knowledge and qualification to carry on the business of a chemist and druggist. That business is primarily the practice of pharmacy; the qualifying examination should therefore be regarded as an examination in pharmacy, or the sum of what is known regarding the characters and methods of presenting medicinal substances.

The Case for Immediate Division of the qualifying examination is ably put in a lengthy communication (see p. 434) received from a well-informed correspondent this week, but the evidence he puts forward and the arguments advanced in his letter seem on the whole to indicate that his case is not a good one. Briefly, he expresses strong belief in the desirability of a definite, controlled course of study, through which each candidate should be required to pass before presenting himself for examination, but he holds that division of the examination is urgently needed, and should take place forthwith. His view is that by examining candidates first in chemistry, physics and botany, better training and greater efficiency would be secured, while the imposition of a compulsory curriculum would be facilitated. But, though it would undoubtedly be a great advantage if pharmaceutical students could prove that they had received a thorough grounding in the sciences mentioned, before proceeding to study the technical applications of those sciences, comprised under the general term pharmacy, it remains to be shown how the preliminary scientific training is to be secured. Apart from the fact that questions in chemistry, physics and botany must, in any case, continue to be asked in the final examination, any attempt to institute a separate examination in science at the present time would almost inevitably tend to encourage cram, and such exhibitions of mental indigestion as the one "Curriculum" describes might be expected to become more frequent than ever.

The Suggested Plan of Division might have the effect of ensuring a better knowledge of the sciences taken in the first part of the examination—*i.e.*, provided proper facilities were afforded for studying those sciences and students compelled to take advantage thereof—but would "Curriculum" expect a student to learn all he ought to know of the technical applications of those sciences during the year or two years which must elapse before the candidate would be allowed to proceed to his final examination? Already examiners find that the candidates' technical and practical knowledge suffers at the expense of the theoretical portions, and the tendency is to cram for a supposititious examination in science, rather than to become educated as an accomplished pharmacist. That tendency would be encouraged if the period of technical training were limited to the one or two years which would be as long an interval between the proposed two parts of the examination as could reasonably be insisted upon. If, however, a compulsory curriculum were in existence, arrangements could be enforced whereby the necessary technical training should be spread over a longer period of time. The present requirement of three years' practical experience is generally acknowledged to be more or less of a farce, but if power were granted to the Pharmaceutical Society to enforce a satisfactory curriculum steps could be taken to make a fairly prolonged course of practical training essential.

In Reply to Dr. Symes, it is not necessary that anyone should have suggested lowering the standard of the qualifying examination. The mere fact of dividing the examination into two parts, without the simultaneous establishment of a compulsory curriculum, would be equivalent to a lowering of the standard, by reducing its stringency. To prevent such a result the only alternative course to imposing a curriculum would be to increase the stringency of the examination considerably in the respective branches when taken piecemeal. Otherwise superficiality might be expected to increase, rather than the thoroughness which Dr. Symes specifies as the object he has in view. But those who advocate immediate division of the examination, before it is provided that candidates shall pursue a definite, controlled course of study, usually protest against any suggestion that a higher standard should be required in the respective branches of knowledge, when an examination is passed in a piecemeal fashion. It is inevitable, however, that such a stiffening or increase in stringency should take place if the general standard is to be maintained, and, unless a compulsory curriculum be previously or simultaneously established, it is easy to see that candidates would be less likely to satisfy the examiners under the proposed scheme of immediate division than they are at present. In the interests of candidates the curriculum is especially necessary; while in the interests of pharmacy and of the public safety a definite, controlled course of study should accompany division of the qualifying examination. Dr. Symes has always wished "to encourage the student to make his studies systematic, to spread them over a longer period of time than he now does, and thus to ensure that theoretical and actual qualification shall be synonymous terms." But he cannot claim that such a result would be attained by merely dividing the qualifying examination into two parts, with a certain interval between

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Nearly Twenty-One Years Ago, at a meeting of the Council of the Pharmaceutical Society (see *P.J.* [3], **12**, 149), Dr. Symes seconded a motion by the late George Frederick Schacht that a report of a special committee appointed to consider the relation to each other of pharmaceutical education and the pharmaceutical examinations be adopted. The Committee recommended (1) that candidates for examination be required to produce evidence of not less than three years' apprenticeship or pupilage with a chemist and druggist; (2) that candidates be prohibited from presenting themselves for the qualifying examination until three years after passing an approved preliminary examination; (3) that candidates be also required to produce evidence of having attended courses of lectures on chemistry, botany, and materia medica respectively, as well as a course of instruction in practical chemistry, after passing the preliminary examination; (4) that the qualifying examination be divided into two portions, to be undertaken on two separate days, but as parts of one examination, *i.e.*, virtually what exists at the present time. On the occasion in question Dr. Symes said "it was felt that if the student was to gain his knowledge thoroughly in a manner which would be permanent, he must extend the period during which that knowledge was gained." Further, he added that, though it was thought the examination should be divided, "there were some objections to bringing a student to Bloomsbury Square to be examined at two different periods." That, however, was nearly twenty-one years ago, and nothing approaching finality has yet been arrived at by the Council of the Society in regard to the relation to each other of pharmaceutical education and the pharmaceutical examinations.

The New Matriculation Examination of the London University will differ materially from the present one, Latin now following Greek into the category of optional subjects. Thus, beginning with the examination to be held in September next, candidates for matriculation will be expected to show a competent knowledge of (1) English, (2) elementary mathematics, (3) Latin, or elementary mechanics, or elementary physics, or elementary chemistry, or elementary botany, (4) two of the following subjects, neither of which has already been taken under (3):—Latin, Greek, French, German, Italian and other foreign languages, history, geography, logic, geometrical and mechanical drawing, advanced mathematics, elementary mechanics, elementary chemistry, elementary physics (heat, light and sound, or electricity and magnetism), elementary biology (botany or zoology). Briefly, a candidate for matriculation need henceforth only satisfy the examiners in (1) English, (2) elementary mathematics, (3) elementary chemistry or some other science, and (4) any two foreign languages, or one foreign language and one other science. It is obvious, however, that if the certificate of the London University Matriculation examination is to be presented by persons desirous of obtaining registration as pharmaceutical or medical students, it will still be necessary to take Latin and one modern foreign language.

The Example of Birmingham in the matter of establishing a faculty of commerce may be imitated to some extent at Oxford and Cambridge, if effect be given to the wishes of certain members of the two older Universities. Thus, at Oxford, a petition has been forwarded to the Vice-Chancellor for presentation to the Hebdomadal Council, requesting that body to consider the desirability of affording greater encouragement to the systematic study of economics and cognate subjects. Such study must necessarily have a very important bearing upon the subsequent lives of the students—whether they intend to pursue a business career, or to offer themselves as candidates for administrative and other posts in the public service, or only to discharge the ordinary duties of citizens—and it is pointed out that a more prominent place is now being assigned to such study in other universities. The petition concludes with a suggestion to constitute a new school of economics and political science, for which a definite course of reading would be prescribed, the school to be confined to such persons as have taken the degree of B.A., or B.Sc., or B.Litt., or have passed the examinations required for the degree of B.A. In a similar petition recently presented at Cambridge, a request was advanced for a complete curriculum forming a new and independent path to the degree of B.A., but the Oxford petitioners content themselves with suggesting that the proposed school should be confined to such persons as have taken degrees at Oxford, or at least have become qualified to do so by having passed the requisite examinations. As pointed out in the *Times*, however, the resemblances between the two movements are greater than the differences, both petitions being indicative of a trend in education, which has been very noticeable of late.

A Special Course in Natural History for training college and King's students will be conducted at Marischal College, University of Aberdeen, during the summer session, and a syllabus of the course has been issued under the supervision of Professor J. A. Thomson. The book is beautifully illustrated, and commences with an examination of a series of types of British vertebrates, followed by a selection of invertebrates. Then follows a discussion of the principles of classification, with brief definitions of varieties, species, genera, etc. The structure of the cockroach is next exemplified, after which there is a brief table of the animal kingdom with appropriate illustrations. Another lesson deals with living animals, that being followed by a discussion on adaptation to surroundings and mode of life. The pupil is subsequently introduced to the leading features in the structure of limbs, after which development claims his attention. Finally, the book includes illustrated studies of various types of common animals from four different points of view.

The Subject of Atomic Weights is referred to in the *American Journal of Pharmacy* (**74**, 241 where M. I. Wilbert shows in tabular form the various atomic weights of the elements as given in the U.S.P., 1880 and 1890, and compares them with the atomic weights used by some chemists on the basis of Oxygen as 16 and Hydrogen as 1. It is pointed out that there is little or no uniformity between them, and, what is more, everyone will admit that should any one of these tables be used the results of computation or work would not agree with the results obtained by another chemist who used a different table. On the assumption that atomic weights are rather relative than absolute, he pertinently inquires, Would it not be just as well to use O 16, C 12, or even Hg 200 as the standard of comparison so long as the old atomic weights are approximately retained? A policy of this kind, it is suggested, would not only simplify the routine work of pharmaceutical and other chemists, but would also facilitate original work and materially contribute to the advent of knowledge as to the constitution and properties of matter.

Mr. Athelstan Braxton Hicks, coroner for the South-Western District of London and the Kingston Division of Surrey, died on Saturday, May 17, from pneumonia, after an illness of less than a week's duration. Mr. Hicks was called to the Bar in Trinity Term, 1875, and was for some time a special pleader on the Western Circuit and at the Middlesex Sessions. Before his appointment as coroner seventeen years ago, he was deputy-coroner for the City of London and Borough of Southwark, also for the City of Westminster, and the West London District. He had for some years been hon. secretary of the Coroners' Society of England and Wales, and was a recognised authority on all matters affecting coroners. He was in a great measure instrumental in securing the addition of carbolic acid to the Poison Schedule, and in various other ways exerted himself with success in the public interest.

Microscopy is a subject of considerable interest, as well as great utility, to many pharmacists, and the attention of the latter may therefore be directed with advantage to the fact that a microscopical department now forms a regular feature of *Knowledge*, the well-known science monthly. The department referred to is conducted by Mr. M. I. Cross, an undoubted authority concerning all that appertains to the microscope and its use, who publishes short practical notes month by month and also furnishes suitable replies to queries.

The Naylor Testimonial Fund now amounts to about £120, a large number of subscribers having availed themselves of the opportunity of showing their appreciation of the services rendered by Mr. Naylor during the long period that he occupied the position of senior honorary secretary to the British Pharmaceutical Conference. It is intended that the presentation shall take place at Dundee, and Mr. F. Ransom, who has succeeded Mr. Naylor as senior honorary secretary, now writes (see p. 437) to say that, in order to facilitate the necessary arrangements, any further contributions should be forwarded at once to the Hon. Treasurer, Mr. J. C. Umney, 50, Southwark Street, London, S.E.

Benevolent Persons are not always so careful as they ought to be in verifying the statements of those who appeal to them for assistance, and even chemists seem occasionally to lose sight of the fact that such statements may not bear investigation. But the necessity for such investigation is strikingly shown in the case to which the Secretary of the Pharmaceuical Society again directs attention, in a letter (see p. 438) which all chemists in business would do well to read and make a note of.

POISONING CASES.

The number of deaths by poisoning recorded last week was nineteen, not eighteen as stated, one case of suicide by phosphorus paste having been omitted from the tabular statement at page 422. The deaths by poison since reported number fifteen—eight accidental cases and seven suicides, thus:—

Poison.	Accident.	Suicide.
Arsenic	1	—
Carbolic Acid	—	4
Chloroform	2	—
Cocaine	1	—
Fumes from a Still	2	—
Oxalic Acid	—	3
Teething Powders	1	—
Zinc Chloride	1	—

Arsenic caused the death of a limekiln proprietor at Tiverton. The poison had been mixed with oatmeal for the purpose of destroying beetles, and the daughter of the deceased used the poisoned oatmeal in mistake to make porridge which her father ate.

Carbolic Acid was taken with suicidal intent by two women belonging to West Gorton, near Manchester; also by a butcher residing at Birchmoor, near Polesworth, and by a young widow at Clapton, who had previously attempted to poison her two children with the acid. The children are expected to recover.

Chloroform taken in excess caused the death of a painter's wife at Finsbury Park, who had been in the habit of taking the drug for some years past. Used as an anæsthetic, chloroform also caused the death of a man in Swansea hospital.

Cocaine injected in excessive quantity caused the death of a medical man living in High Holborn, London, who had been in the habit of injecting both cocaine and morphine to relieve the pain of sciatica.

Fumes from a Still killed two workmen, who were engaged in cleaning the apparatus, at chemical works situated at Buttershaw.

Oxalic Acid was taken with fatal results by a young woman at Clifton; also by a bootmaker at Yarmouth and a miner at East Vale, Longton.

Teething Powders, believed to contain mercury with chalk, and probably opium, were administered to an infant at Sunderland, who was subsequently shown to have died from the effects of some irritant poison.

Zinc Chloride, in the form of soldering fluid, was accidentally taken by a Grimsby fisherman.

Non-Fatal Cases.—The poisons reported during the past week as having been taken by would-be suicides include an embrocation, a preparation called "Kill-germ," laudanum, oxalic acid, red precipitate, and sulphuric acid.

Quinoline Bismuth Sulphocyanide in Gonorrhœa.—E. Jacobi prescribes a ½ per cent. injection as follows:—Quinoline bismuth sulphocyanide, 1, is rubbed down with distilled water and glycerin, of each, 5; then diluted with distilled water to 200. By this treatment a part of the compound is at first dissolved, and on adding the larger volume of water, decomposed, forming, according to Edinger, quinoline sulphocyanide, basic bismuth sulphocyanide, and free sulphocyanic acid. In the original paper the bismuth compound is described as "aurin." This is probably a misprint for "crurin," by which name quinoline bismuth sulphocyanide has long been known.—*Pharm. Post*, **35**, 38.

LEGAL INTELLIGENCE.

Medicine Stamp Duty Acts.

AMMONIATED TINCTURE OF QUININE, B.P.

At the Thames Police Court, before Mr. Dickinson, on May 16, Mr. W. S. Glyn-Jones appeared as defendant to a summons taken out by the Inland Revenue authorities under the Medicine Stamp Duty Acts. Mr. C. H. Kirby defended the case, and Mr. Denniss appeared on behalf of Somerset House.

Mr. Denniss said the summons was taken out under Section II. of 52 Geo. III., C. 150, which imposed a penalty of £10 for selling an article unstamped which was liable to duty. The label in question was:—

AMMONIATED TINCTURE OF QUININE, B.P.
A well known and highly recommended remedy for colds.
A teaspoonful in water every four hours until relieved.

The preparation was not in the schedule, but the general charge of duty included

> "All other . . . tinctures . . . which . . . shall hereafter be . . . by any label or words written or printed, affixed to any . . . bottle, . . . held out or recommended to the public . . . as beneficial to the prevention, cure, or relief of any disorder,"

and this covered the present case.* If the label had merely stated "Ammoniated Tincture of Quinine, B.P.," without holding it out as beneficial, it would not have been liable. He explained that the action was a friendly one, and read correspondence which had passed between the defendant and Somerset House which led up to the summons being taken out. There were, he added, certain exemptions to duty, and he believed it would be held by the defendant that this article came within the exemption which was as follows:—

> "And also all mixtures . . . which shall be uttered or vended by any such . . . chemist, or druggist as aforesaid . . . the different denominations . . . of which . . . are known, admitted and approved of in the preservation, cure, or relief of any disorder . . . incident to . . . the human body . . . wherein the person mixing, etc., the same, hath not nor claims to have any occult secret or art for the mixing . . . the same, nor . . . claims any exclusive right . . . to . . . mixing . . . or . . . vending the same, and which [have not been] held out or recommended to the public by the owners, proprietors, makers, compounders, original or first vendors thereof as . . . proprietary medicines or as beneficial for the prevention, cure, or relief of any distemper."

Mr. Denniss quoted the case of Smith *v.* Mason, in which tincture of nux vomica had been held liable to duty.

Mr. T. P. Powning gave formal evidence as to the purchase of the sample from the shop of Messrs. Glyn and Co., 159, East India Road, Poplar, E.

Mr. Kirby said the defence was that they came within the exemption. The Act was undoubtedly intended to tax medicines of the kind commonly known as patent medicines and not to levy duty upon Pharmacopœia preparations. The framers of the Act took out all drugs except those which were of a proprietary nature. If an article once became liable, it was always liable. If the original proprietor had held it out it would make no difference if the defendant in this case had not recommended it. The real issue turned upon the meaning of the words:—

> "Nor have been . . . by any public notice or advertisement . . . held out . . . by the owners, proprietors, makers, compounders, *original or first vendors.*"

These words were different from those in the charge which read "makers, vendors, or proprietors." The defendant was not the owner or proprietor of ammoniated quinine, as a medicine, though he might be the owner of the article sold.

The Magistrate: Don't you come under any of the headings?

Mr. Kirby replied that, in the sense referred to by the words of the Act, Mr. Glyn-Jones was neither the owner, maker, nor first vendor, and he contended that all articles, sold by a chemist and druggist, which were admittedly recognised as useful for the relief or cure of certain ailments and respecting which no claim to proprietorship or holding out had been made by the first vendor, were exempt.

Mr. Dickinson said he failed to see that the words, "original or first vendors" had any special significance, and that if Mr. Kirby's view was right anyone could recommend almost everything without paying duty.

Mr. Kirby replied that it was limited in this case to a chemist and druggist. The meaning of the words "original or first vendors" might be got at by referring to other passages. He quoted various sections of the Act showing that "original or first" vendor was always taken to mean the owner or proprietor of the article, and not the person who retailed it, and that the words in the exemption showed that if there was any liability it would fall upon the original vendor. He traced the history of the preparation since 1853, when it first came before the public, to the present day, and stated that ammoniated quinine had never been a proprietary article.

The Magistrate: Then I understand your argument to be that unless the original proprietor advertises the article no subsequent holding out can invalidate the exemption.

Mr. Kirby replied that, unless that construction held good the exemption would have no effect.

The Magistrate: The meaning of the Act clearly is that you shall not recommend anything unless you pay for it.

Mr. Denniss argued that Mr. Glyn-Jones was, in the meaning of the Act, the first vendor of the bottle bearing the label which was liable to duty. If the manufacturer of the preparation had sold it with that label upon it then he would have been liable. The article became liable as soon as the label was put on it, and in this case liability fell upon the present defendant. There were articles in the schedule liable to duty which had never been proprietary articles, such as aniseed, rose and tolu lozenges, and it was these, which under certain circumstances, would come into the exemption.

Mr. Kirby argued that it was not the package but the article itself—ammoniated quinine—which was liable to duty, and the defendant was not the first vendor of the preparation itself.

The Magistrate: Mr. Denniss contends that you are the first vendor, unless you can show that you did not put this label on the bottle.

Mr. Kirby said that if that were so, the exemption came to nothing, and chemists would be debarred from exercising the right which, in his opinion, they possessed, of recommending Pharmacopœia preparations without paying duty.

The question arose as to whether the prosecution would admit that ammoniated quinine had never been a proprietary article, and Mr. Dickinson suggested a conference between the two solicitors on that point, so that they could come before him at the next hearing with debatable points only. The case was then adjourned until June 6.

Charge of Embezzlement.

DRUG STORE MANAGER COMMITTED FOR TRIAL.

At the South-West London Police Court, on May 15, Joseph Milne, 26, described as a chemist's manager, surrendered to his bail before Mr. Garrett, to further answer the charge of embezzling money belonging to his employers, Lewis and Burrows (see *ante*, p. 425).

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* The universality of the general charge of duty being the whole question at issue, the latter portion of the passage, from which the above words were quoted by Mr. Denniss, commencing "Wherein the person making, etc.," requires to be read with them, since it may be held to imply important qualification.—[ED., *P.J.*]

The accused managed the business of the prosecutors at Lavender Hill, Battersea, and the allegation against him was that he was short by several pounds in his takings, and that he had misappropriated the money entrusted to him and his two assistants to give change.

Mr E. W. Gough, the general manager, admitted in his evidence that the accused handed him a sum of money—between £4 and £5, to cover the deficiency, but he refused to accept it.

The accused was committed for trial, bail being allowed.

Sale of Food and Drugs Acts.

Compound Liquorice Powder.

At Halifax Police Court, on May 17, Robert Lamb Brook, of Norwood Green, was summoned for selling compound liquorice powder which was destitute of sulphur. Defendant stated that he sold the drug exactly as he received it from the wholesale druggists. In fining him 2s. 6d. and costs the magistrate advised defendant not to purchase drugs in future without procuring a warranty as to their purity.

White Pepper.

At the Liverpool Police Court, on May 14, before the Deputy Stipendiary, Mr. J. Kinghorn, Duncan Harrison, Islington, was charged by the Corporation with selling white pepper which was not of the quality demanded. Mr. Cripps, Assistant Town-Clerk, prosecuted, and Mr. Leslie Scott, instructed by Mr. Rudd, appeared for the defence.

Mr. Collingwood Williams, city analyst, called for the prosecution, said he found the sample submitted to him contained about 12 per cent. of the outer husk, which was an excessive quantity

After further evidence had been heard on the same side, Mr. Scott, for the defence, contended that the pepper was of the ordinary white quality, and nothing had been added to it. Further, the certificate was not good in law.

The latter objection was upheld by Mr. Kinghorn, on the ground that the certificate did not state the proportion of bleached husk which might exist in ordinary white pepper when ground.

Mr. Cripps having applied for a case for appeal, which was granted,

Mr. Scott asked that the case might be heard on its merits in order to avoid the cost of appeal, but Mr. Kinghorn decided that, having admitted the technical point, it was unnecessary to go into the case any further.

Spirits Acts.

Extracting Spirit from Wood of Cask.

At Worship Street Police Court, on May 15, the United Kingdom Tea Company, of Paul Street, Finsbury, and Mr. William Farson, manager of the Company, were summoned by the Excise authorities for having in their possession on the company's premises spirits extracted from the wood of a cask.

Mr. Dennis, barrister, who prosecuted for the Inland Revenue, said the informations were laid under the Act 61 and 62 Vic., cap 10, which made it penal to extract any spirits from the wood of any cask which had contained spirits. The reason of that was that where any cask had contained spirits it passed out of the warehouse without paying duty on what had been absorbed by the wood of the cask. If, then, by any process of washing, the spirit was afterwards extracted it escaped duty.

Mr. Lockyer, an Excise officer, said he visited the company's premises on April 4, and found in the bottle-washing room a quarter cask, which contained some liquor. The contents of the quarter cask were confiscated and found, on analysis, to be 31·8 under proof.

Mr. Proctor, the analyst, said he was satisfied the spirit was extracted from wood because of the presence of a high percentage of fusel oil and tannin.

Mr. Samuel Richard Attwood was called for the defence to say that, having had a prolonged experience as a wine and spirit merchant, he was of opinion that it was impossible to extract a spirit of such a high percentage as 31·8 from a cask.

Ultimately the company and Mr. Farson were each ordered to pay a fine of 40s. and 2s. costs.

Dentists Act, 1878.

A Chemist and Druggist Fined.

At Cardiff Police Court, on April 16, before the Stipendiary (Mr. T. W. Lewis), Templar E. Malins, chemist and druggist, was charged with unlawfully using a description implying that he was a person specially qualified to practise dentistry. Mr. George David appeared to prosecute on behalf of the South Wales and Monmouthshire Dental Association, and Mr. St. John Francis Williams defended.

Mr. David, in opening the case, said defendant had, by various advertisements, led the public to believe that he was specially qualified in dentistry. As a matter of fact he was not registered as a dentist or as a medical practitioner. If a man held himself out as being able or qualified to do the work of a dentist, and he did not possess the legal qualification, then he committed an offence. A serious aspect of the case was that defendant, not being qualified to carry out operations in dentistry, issued pamphlets stating his prices for ordinary tooth extractions, for extractions with cocaine or ethyl chloride (painless), and for extractions under the influence of nitrous oxide gas. There was ample evidence that defendant repeatedly advertised himself as a specially qualified man. Specially qualified did not mean legally qualified. If a man held himself out as being qualified or able to do the work of a dentist, and he was not so qualified, that brought him within the terms of the Act. It was quite sufficient if he led the public to believe that he was a person able to carry out this. It did not mean he was implying that he had any particular surgical diploma. The construction he (Mr. David) put upon the Statute was that the defendant held himself out to the public as being specially expert in dentistry.

Mr. Francis Williams said that if it meant specially qualified by experience, Mr. David would have to prove that defendant was not so qualified. Unless it meant specially qualified by law defendant had not committed any offence. He (Mr. Williams) admitted the facts, but he failed to understand how a man, calling himself a "tooth extractor," or even "merciful tooth extractor," could be said to hold himself out either as a dental practitioner, or that he could be said to be adopting any title, addition or description implying that he was registered under the Act. There was no suggestion of any registration in any of the advertisements referred to by Mr. David. So far from holding himself out as a dental practitioner, defendant took the precaution of putting the fact that he was a chemist in every single advertisement relating to teeth. If the mere fact of calling oneself a merciful extractor of teeth was an offence against the Act, every chemist who had a notice in his window, "Teeth extracted," was committing an offence. Further, every chemist who displayed in his shop window a dish of teeth which had been extracted was holding himself out as an extractor of teeth, and was therefore committing an offence. Mr. David had endeavoured to prove that the Act prohibited any man, unless he was registered, from carrying on the business of a dentist. It did nothing of the kind. If a man was a skilled person he might make the public aware of the fact. That was all the defendant had done. All the advertisements about perfect-fitting teeth and about supplying gas for the purpose of extraction were descriptions of work defendant was capable of doing, and not of himself. The Act did not intend to make it an offence to advertise one's ability. It had not been suggested that one word in the advertisements was untrue.

The Magistrate said the whole question was one of fact—whether, looking at the whole tenor of the advertisements, admittedly emanating from the defendant, he held himself out as a person specially qualified to practise dentistry. It appeared to him that a person who advertised himself as a "merciful tooth extractor," as being capable of fitting teeth perfectly, and of turning out the highest class of work, certainly did put himself forward as a person not only of special qualifications, but of the very highest as an expert. It was admitted that defendant was not legally qualified, and, that being so, there must be a conviction. However well qualified defendant might be, he was not entitled to advertise himself as specially qualified, unless he had the legal qualification. Therefore, looking upon the possibility of the imposture that might be imposed upon the public, he would inflict a penalty.

A previous conviction for a similar offence, in July, 1896, having been proved, the Magistrate imposed a fine of £20, and allowed seven guineas costs. He declined Mr. Williams's application to state a case, on the ground that it was clearly a question of fact, no point of law being involved.

COMMERCIAL INTELLIGENCE.*

Morocco Olive Oil.—The principal feature of the export trade of Mogador (Morocco) for the year 1901 is reported to have been olive oil, the value of the oil exported being £133,641. The supply was plentiful, and it was shipped in large quantities, nearly three times as much—4,293 tons—being exported last year as in 1899, when the export—1,515 tons—exceeded all previous records. Of the total export of olive oil £24,594 worth was shipped to London, £24,464 worth to Germany, £43,320 worth to Marseilles, and £27,720 worth to Italy. A great amount of this oil is said to reach Hamburg, inquiries showing that if Morocco oil is certified as not being for refining purposes it enters Germany duty free. The United Kingdom, remarks Vice-Consul Madden, prefers other oils, probably those from Spain or the Levant. The Germans, however, do not mind the sediment in Morocco oil, which they use for making soap and for machinery purposes.

The Profit from the Opium Monopoly in Formosa realised by the Government during the year 1900, Acting-Consul Wawn (North Formosa) reports, was about £94,000, opium being imported to the value of £360,464, an increase over 1899 of more than £65,000. The imported opium is manufactured at the Government factory at Taipeh, after which it is distributed to the various local Government offices throughout the island. Thence it is sent to agents, who in their turn supply the dealers. Opium is sold to the consumers as first, second, or third-class, as manufactured by the Government, and it is forbidden to mix two classes or to adulterate the opium. But the retail price is not in any way fixed by the Government. During the year 1900 opium to the value of nearly £450,000 was supplied to the dealers in the different districts. At the end of December, 1900, there were 165,752 licensed opium smokers in Formosa, 152,950 of whom were male and 12,802 female, giving a percentage of 6·18 of the total population, as against a percentage of 5·29 in the year 1899. Persons licensed to engage in the opium business numbered 3,028, and there were 648 cases of infringement of the opium law during 1900.

The Interesting Discovery has been made, Acting-Consul Kestell Cornish (Zanzibar) reports, that the fruit of a tree which grows principally at Dunga will, on being tapped with a knife, produce a white fluid, which, when placed in boiling water coagulates into a substance closely resembling gutta-percha. This in the process of cooling becomes hard, but in its previous soft state can be moulded into any required shape. The fruit, he states, somewhat resembles a peach in shape, but is of the size of a small melon. Samples of this product have been sent to London, and doubtless by this time expert opinion has decided whether it is actually gutta-percha or not.

The Secret of Obtaining the Old Vegetable Dyes used in the Turkey carpet industry has not, according to Consul Longworth, been forgotten, and the almost universal use of aniline dyes in the carpet industry is simply due to the spirit of laziness and false economy prevalent among the natives. Inferior aniline dyes, it is stated, are much easier to get, and are slightly cheaper than the vegetable dyes, the question of quality and durability not being considered. An Armenian who is in the rug business told Mr. Longworth that he made a visit to the Kurd country with the sole purpose of discovering the Kurd methods of preparing certain vegetable dyes. He was perfectly successful in obtaining all the colours he wanted, and he stated that the Kurds know how to get all the ordinary colours, but do not understand getting various tints by blending. He also stated that a single individual rarely has the secret of more than two or three colours, the secrets of the colours being jealously preserved among themselves, but are parted with readily enough to a stranger for a consideration.

OBITUARY.

Bagshaw.—On May 14, William Bagshaw, Chemist and Druggist, Oldham. Aged 64. Mr. Bagshaw was one of the oldest tradesmen in Oldham, having been a partner in the old-established firm of Messrs. Braddock and Bagshaw, chemists, of Yorkshire Street, until about two years ago, when he retired from active business. Mr. Bagshaw was a native of Teddington Field, and went to Oldham as an apprentice with the late Mr. Wm. Braddock, who established the business latterly known as Braddock and Bagshaw, over seventy years ago. Subsequently the business was taken over by the late Mr. George Braddock and Mr. Bagshaw, who continued in partnership till about twenty years ago, when the partnership was dissolved, and the business was carried on by Mr. Bagshaw.

Cowles.—On May 19, Charles Cowles, Chemist and Druggist, Beccles, formerly of Stratford. Aged 67. Mr. Cowles had been a member of the Pharmaceutical Society since 1871.

Cullen.—On May 16, Thomas Cullen, Chemist and Druggist, Paisley. Aged 71.

Guest.—On May 19, William Guest, Chemist and Druggist, Nottingham. Aged 73.

Ombler.—On May 12, William Henry Ombler, Chemist and Druggist, Market Weighton. Aged 41.

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* From Consular Reports and other official sources.

WESTERN CHEMISTS' ASSOCIATION (OF LONDON).

The last meeting of the session in connection with this Association was held at the Westbourne Restaurant, Paddington, on Wednesday, May 21, the **President**, Mr. W. F. Gulliver, in the chair. There was a fairly good attendance, including several old members who recently have not been "regular attenders" at the meetings of the Association, but who on the present occasion came to support a resolution of sympathy with the family of one of the founders of the Association, whose death occurred last week.

Mr. **Philp** (Hon. Secretary) read the minutes of the previous meeting, which were confirmed.

Death of Mr. Frederick Andrews.

The **President** then said it was his painful duty to refer to the sad death of Mr. F. Andrews, which he was sure all deeply deplored. He was the first Secretary of the Association, a past-President, and a gentleman whom they all greatly respected and loved, and who would be missed very much. He always took the deepest interest in pharmacy, and had its welfare at heart. Personally, he (the President) felt that he had lost an old friend. He believed the last occasion on which Mr. Andrews was present at a meeting of the Association was at the December meeting, when he had the honour to deliver the presidential address, and Mr. Andrews very kindly moved a vote of thanks to him for that address. Several letters had been received from members who expressed regret at being unable to be present to support the vote of condolence with Mrs. Andrews, which it was proposed to pass. Mr. A. P. Baker wrote of the many pleasant times spent in Mr. Andrews' company, and expressed his great sense of the loss he personally had sustained by the death of his old friend, as well as the loss sustained by the Western Chemists' Association and pharmacy generally. Mr. J. W. Taplin, a past-President, also wrote expressing his deep regret and sympathy with the family and the Association. The President then moved that the following be passed and sent to Mrs. Andrews:—

> That the Association learns with the greatest regret of the death of Mr. Frederick Andrews, who, as one of the founders of the Association, its first Secretary, then President, and up to the time of his death a member of its Committee, has always taken an active part in its work. The Association wishes to express its appreciation of his services and to offer to Mrs. Andrews and her family its deep sympathy with them in their bereavement.

The **Vice-President** (Mr. Bowen), in seconding the motion, said no words of his were needed to support what had already been said by the President. Mr. Andrews was not, perhaps, so well-known to him as to many of those present, but he had always found him most helpful in any little difficulties that occurred in connection with his duties as an officer of the Association, and in many other ways. He could only add his testimony to the sorrow they all felt at the loss of so good an old friend of the Association.

Mr. **Harrington** said the death of their dear friend, Mr. Andrews, was a great loss to the Western Chemists' Association. From the very beginning of the Association's existence he had known Mr. Andrews, who had always been its loyal and true friend. His death was not only a loss to the Association, but to each individual member of it.

Mr. **Cracknell** said that as an immediate past-President, and one who worked with Mr. Andrews as co-Secretary, he would like to say that Mr. Andrews had the interests of the Association thoroughly at heart, and, personally, he felt that he was very much indebted to him for the positions he had held in the Association. He had always found Mr. Andrews an honest and faithful friend of the Association, and he deeply regretted his death. It was, said Mr. Cracknell, a singular coincidence that during the past few months the deaths had occurred of three past-Presidents, viz., Mr. Long, the Association's first President; Mr. Martindale, its second President; and now Mr. Andrews, the third President. He sincerely supported the motion.

Mr. **Henry Mathews**, as a very old member of the Association, wished to support the motion. He would like to say, on behalf of his brother and himself, that as a fellow pharmacist Mr. Andrews, who lived in their immediate neighbourhood, fully carried out the principles of a high-minded gentleman, inasmuch as they always found him extremely kind, extremely gracious, and willing to assist in the most cordial manner. He thought Mr. Andrew's example was an object lesson for pharmacists, who all ought to work well together, and not to think that because another pharmacist happened to be in business a short distance away he was an enemy. He thought they ought to foster a feeling of friendship, and work in harmony with each other.

Mr. **Cooper** said he had the pleasure of working with Mr. Andrews on two committees—*i.e.*, those of the P.A.T.A. and the C.D.A.—and he always took the keenest interest in their work, and at all times was most ready to help in every possible way. In fact, the position occupied by those associations to-day was largely due to the guidance received from Mr. Andrews, who might truly be called "The Chemist's Friend." He was sure that throughout the country the name of Mr. Andrews must be held in the highest esteem by pharmacists. It seemed a pity that such men as Mr. Andrews could not be known by everyone connected with pharmacy. Those who had spoken at that meeting had referred to him kindly, but no words that he could say could express the very high esteem in which Mr. Andrews should be held by every chemist. He had been associated with him for many years, and had always found him kind, courteous, very forbearing and helpful. Sometimes, of course, he differed from the opinions of others, but while endeavouring to bring them round to his own view by showing that they were wrong and he was right, Mr. Andrews, so far as he knew, never gave utterance to an offensive word. He, personally, deeply regretted his death.

Mr. **Donald Watson** said it grieved him to have to be present on such an occasion, so soon after the meeting at which they deplored the death of their friend, Mr. Martindale. He had known Mr. Andrews as a friend for something like thirty-five years, their acquaintance having been made in rather a singular manner. It was at a meeting of the British Pharmaceutical Conference, held at Dundee in the year 1867, that he was first introduced to Mr. Andrews by Dr. Attfield. They had arrived late, and, as there was only one bed to be got in the hotel, Mr Andrews and he shared it. From that time to the present they had been close friends, and he had always admired him and esteemed his friendship very highly.

The motion was then put and carried in silence.

Other Business.

The **President** said that, this being the last meeting of the session, the date of the annual dinner would have to be decided upon; also the question whether a summer outing should be held this year.

After some discussion it was decided to hold the annual dinner on Wednesday, November 19 next, at the Café Royal, but, in regard to the question of a summer outing, it was thought advisable to abandon the idea this year on account of the Coronation festivities.

The **President** announced that the next meeting would be held on October 15 next, and the meeting then terminated.

PLYMOUTH, DEVONPORT, STONEHOUSE AND DISTRICT CHEMISTS' ASSOCIATION.

At the quarterly meeting of this Association, held on Friday, May 16, the chair was taken by the President, Mr. C. T. Weary, and Mr. Courtenay Manuell was elected a member of the Association.

A lengthy discussion arose out of the minutes of the previous meeting with regard to the establishment of

Day Classes in Pharmacy and Materia Medica,

to be held at the Technical Schools, and it was eventually decided to elect a sub-committee to meet the Junior Section, and ascertain the probable number of students who would join.

On the motion of Mr. Maitland, it was decided to form a committee to make the necessary arrangements for the annual outing.

Suggested Alteration of Rules.

The Committee, after due consideration, had decided that certain of the rules of the Association required modifying, the chief alteration being in Rule 17, which would now admit registered chemists and senior assistants to the Senior Section, and would read :—

> "The Association to consist of two sections: (*a*) Senior (employers, registered chemists, and senior assistants); (*b*) Junior (assistants and apprentices)."

The necessary alterations having been agreed to, Mr. Park suggested that apprentices should subscribe half-a-crown annually to the Association instead of a shilling; but Mr. Groombridge thought it would not be practicable to alter the present amount. He would, however, bring the matter before the Committee.

The Pharmaceutical Council Election.

The President said it had been customary to move a vote of confidence in Mr. C. J. Park at the expiration of his term as a member of the Pharmaceutical Council.

Mr. Weary said it had been suggested that Mr. Park did not speak much at the Council meetings, but as the real work was done in committee, he did not consider this any criterion. Apart from any personal feeling he had in the matter, he thought chemists in the West of England should have a representative on the Council, and he was sure that if they, as an Association, desired any special policy to be brought before the Society Mr. Park would be the first to take the matter up. He had great pleasure in moving—

> "That this Association has the greatest confidence in Mr. Park, and urges all members to support him at the coming election."

Mr. Turney, in seconding, said Mr. Park had always shown the keenest interest in his work as a member of the Council. He was a chemist in business and realised the position of pharmacists, and had always supported measures for improving their position; he knew that he was not only thought highly of in the West of England, but his colleagues on the Council held him in the highest esteem.

Mr. Cocks thought that some undercurrent was at work to replace Mr. Park on the Council, and mentioned that several associations had issued circulars omitting Mr. Park's name for support.

Mr. Roper suggested that a committee be formed, and a circular drawn up and sent to all members urging them to give Mr. Park their vote.

The proposal was unanimously agreed to.

Mr. Park, in thanking them all for the kind way they had received him, said the Association had asked him to stand for election on the Council some years ago, at that time he had no desire on his own part to be their representative as it would entail a certain amount of self-denial, and would occupy a good deal of his time, but he had never regretted having been elected, and if it were their pleasure to support him again he would always endeavour to further their interests.

Nomination of Divisional Secretary.

Mr. F. W. Hunt having resigned his position as Divisional Secretary for Plymouth, it was suggested the Association should propose a successor. On the motion of Mr. Woods, however, it was decided to call a meeting of all the chemists, who would discuss the matter fully.

The meeting then adjourned.

On Wednesday, May 14, several members of the Association availed themselves of the opportunity of joining the Plymouth Incorporated Mercantile Association in a visit to two of the local manufacturing industries. At the premises of the

New Patent Candle Company

the visitors were met by the managing director, Mr. Angear, and conducted through the spacious melting, refining, and packing rooms, and the whole process of the manufacture of candles and soap from crude materials was clearly and succinctly explained. Mr. Angear gave a brief and highly interesting account of how the crude petroleum from America was distilled, producing burning and lubricating oils and a residuum in which from 1 to 2 per cent. of solid paraffin "scale" remained. The process of colouring and perfuming toilet soap created considerable interest, and at the conclusion of the visit each member was presented with a cake of toilet soap. On leaving the candle works the members proceeded to the

Gas Works,

where the processes of making coal and carburetted water gases were explained, and the mechanical appliances for stoking and drawing the fires were shown in action and proved very interesting.

HASTINGS AND ST. LEONARD'S PHARMACEUTICAL ASSOCIATION.

The adjourned annual meeting was held on Thursday, May 15, at the Castle Hotel, Hastings. Mr. H. C. Edwards presided, in the absence of the President. The annual report and Treasurer's statement were submitted and adopted. The total membership and balance proved to be highly satisfactory, and the summary of work done during the session was received with approval.

Election of Officers.

The following officers and Committee were elected for next session: Mr. F. Rossiter (President), Mr. C. R. Stedman (Hon. Sec.), Mr. A. W. Dawes (Hon. Treasurer); Committee: Messrs. John Smith, H. C. Edwards, E. Ripley, F. Tree, Sidney Smith.

A proposal to alter the name of the Association so as to include Bexhill and other districts was then considered. It was pointed out that all the chemists in Bexhill have already joined and promised their support for next session, and the opinion was expressed that the title of the Association should be one which would not appear to exclude other chemists than those in the town of Hastings and St. Leonard's. After a lengthy discussion it was agreed that the Association shall in future be known as the

East Sussex Pharmaceutical Association.

This terminated the business of the evening, and the Association then adjourned until September.

ROYAL INSTITUTION.

At a meeting held on Friday, May 16, Sir Frederick Bramwell was in the chair, and a discourse was delivered by Sir Robert Ball, who took for his subject

The Nebular Theory.

After stating that the sun was shrinking at the rate of about 16 inches per diem, the lecturer said that this was not alarming, for going on at this rate for about forty thousand years or so the sun would be still of fairly considerable dimensions. This shrinking must have been going on for ages, and it was explained by means of a diagram how the sun must at one time have occupied what is now the earth's orbit. Indeed, our earth and the planets, together with the sun, formed, in the remote past, one great mass of heated gas, or what is now called a nebula. Amongst the names of those who evolved the nebular theory, that of Kant occupied a prominent place; as did also that of Laplace. A series of photographs of nebulæ in various stages were then thrown on the screen. Many of these were taken by Dr. Isaac Roberts, and some were from the Yerkes and Lick Observatories. The first of these showed the nebulæ in an amorphous condition, like a tiny streak of white cloud in a summer sky. Then followed a magnificent set of photographs showing the nebulæ in a spiral condition, the most perfect being shown first in order that the audience might know what to look for in stages in which the spiral form was not so well defined. These illustrated the process of evolution by which our solar system had been formed. The lecturer remarked, however, that our system had been evolved from a quite insignificant nebula as compared with those which had been thrown on the screen. The problem of this evolution was enormous, but from a consideration of the fundamental principles of mechanics we were enabled to follow the general outline of the process. Supposing the nebula to be isolated from the external influence, it must have a greater tendency to movement in one direction than in another, and in the course of time that tendency would increase so that finally movement would take place only in one direction, then there would be a tendency for it to become flattened more or less into one plane. The movements also appeared to be all in the same direction with one or two exceptions. This explained how it was that in the solar system the planets were practically all in the same plane. Somewhere about 500 movements of this kind were known, and this fact was greatly in support of the belief that this was not due to accident, but to some physical cause, the explanation of which was supplied by the nebular theory. Some interesting photographs of the new star in Perseus showed the actual motion of a nebula. Photographs taken at intervals showed the nebula in its neighbourhood had moved in relation to certain stars.

CHEMICAL SOCIETY.

At a meeting held on Thursday, May 15, at Burlington House, Piccadilly, Dr. W. H. Perkin, senr., was in the chair, and there was a good attendance of members. The first paper was by

Dr. Baly, on "The Variation with Temperature of the Surface Tensions, and Densities of

Liquid Oxygen, Nitrogen, Argon, and Carbon Monoxide."

The apparatus and the methods employed in these determinations were discussed. The author obtained the following figures for the density of the gases examined:—Oxygen, between 68°-89° absolute, 1·2489-1·1479; nitrogen (68°-89° abs.), 0·8537-0·7076; carbon monoxide (68°-89° abs.), 0·8558-0·7676; argon (84°-89° abs.), 1·4192-1·3890.

The next paper was by Dr. Forster on "The Comparison of Bromo-nitro-camphane and Bromo-nitro-camphor."

This was interesting, as it was the outcome of a study of the ring which does not contain the carbonyl group, previous work having been almost entirely confined to the ring containing the carbonyl group.

A paper was then read by Dr. Thorne on the

Purification of Hydrochloric Acid.

The author said that hydrochloric acid was more suitable than sulphuric in applying Marsh's test, but it was seldom free from arsenic in small quantities. In order to remove the arsenic it was proposed to use a modification of Reinsch's test. An ordinary good commercial acid may be used. This is diluted to a gravity of 1·100; the diluted acid is then raised to the boiling point, and a piece of copper gauze added. The gauze should be 100 mesh, and about four inches square used for two litres of acid. The acid is kept boiling for an hour, at the end of which time the gauze must be taken out, and a fresh piece put in if necessary, and the operation repeated until the gauze remains undimmed after boiling for one hour. The acid is then introduced into a retort with a fresh piece of copper, and distilled almost to dryness, the first few C.cs. being rejected. By this process an acid is obtained which is of suitable strength for using in Marsh's test. Large quantities had been prepared in the author's laboratory in this way, and very satisfactory results had been obtained. This method was considered as good as that recommended by the joint committee on arsenic, whilst it was less troublesome. The meeting then adjourned until Wednesday, May 28.

REVIEWS AND NOTICES OF BOOKS.

'Encyclopædia Britannica.' The first of the new volumes forming Vol. XXV. of the Tenth Edition. Edinburgh and London: A. and C. Black; *The Times*, Printing House Square.

Since the first publication of this work in 1771 by a society of gentlemen in Scotland, the several editions of it have expanded from 2,670 pages until the ninth edition, published between 1875 and 1889, contained 21,572 pages. Most of the matter in that edition is of permanent value, but progress since that time has been so vast and varied that many familiar subjects of the present time are unnoticed in the ninth edition, and to meet the requirement of bringing the whole work up to date without incurring the cost of republication, the eleven new volumes, which are now in course of being issued within the present year, have been prepared to complete and supplement the information contained in the ninth edition, of which, it appears, that some half-million copies are distributed through all parts of the English-speaking world. The articles contained in the first of the new volumes bear evidence of the thoroughness with which they have been brought up to date. Applications of science figure conspicuously, as may be shown by mention of articles on such subjects as accumulators, acetylene, acid and alkali manufacture, adulteration, advertisement, aeronautics, æther, alloys, aluminium, argon. The general editorship of the work has been entrusted to Sir Donald Mackenzie Wallace, Professor Hadley, of Yale, and Mr. Hugh Chisholm, who have been assisted by a large number of departmental editors and contributors representing most of the Universities and learned societies in the world. For the purpose of affording a general view of the ten thousand articles contained in the new volumes, the publishers have issued, in the form of a pamphlet, extracts from a few of the pages, with specimens of the plates, maps, etc., used, some of which are in themselves illustrations of modern scientific applications.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

SAPONIN IN GUAIACUM.

E. Paetzold has found that saponin occurs in guaiacum wood and in the resin. He considers that the physiological action of the drug is due to this constituent. The cortex is richest in the glucoside, the wood containing rather less and the resin but traces.—*Chem. Centralblatt*, **73**, 221, after *Archiv. exp. Pathol.*

VOLATILE SALT OF BERYLLIUM.

By dissolving beryllium oxide in dilute acetic acid an amorphous gummy mass is obtained, which, according to G. Urbain and H. Lacombe, gives crystalline basic beryllium acetate, having the formula $(CH_3 \cdot CO_2)_6Be_4O$. It forms crystalline needles, melting at 283°-284° C., and boiling, undecomposed, at 330°—331°. When dissolved in absolute alcohol and treated with alcoholic KOH no precipitate is thrown down, but on the addition of a trace of water an immediate precipitation takes place, the phenomenon being a remarkable instance of ionisation. The salt is very stable in an acid solution; when dissolved in acetic acid, saturated with HCl, and heated to 150° C. it remains quite unaltered.—*Comptes rend.*, **133**, 874.

RADIO-ACTIVITY OF THORIUM COMPOUNDS.

E. Rutherford and F. Soddy find that the radio-activity of thorium compounds is the consequence of changes in which new types of matter are formed, and they conclude, therefore, that it is a manifestation of sub-atomic chemical change. Thorium, from which ThX (see *P. J. ante*, p. 67) has been separated regains its activity with time, but the activity of ThX decreases and has almost completely disappeared when thorium reaches its maximum again at the end of three weeks. Emanating power appears as a property of ThX and not of thorium, and is proportional to the activity of the ThX present. The decay and recovery of emanating power of ThX and thorium are completely analogous to the decay and recovery of radio-activity. These results find their simplest explanation in the view that a secondary change is proceeding in ThX. One of the products is gaseous, and in the radio-active state constitutes the emanation. This change appears more allied to ordinary chemical reaction than the primary, for it is affected by the conditions. The residual activity of thorium would be explained if the chemical change which produces ThX produces also a second kind of active matter, closely allied to thorium in its properties. The radiations of this residual part are composed entirely of rays non-deviable in the magnetic field, whereas the other two components of thorium radioactivity comprise both deviable and non-deviable radiation, thorium being analogous to uranium in that respect. It is found that ThX possesses a distinct chemical behaviour which differentiates it from thorium, ammonia being the only reagent of those tried capable of separating it from the latter. The amounts of ThX produced in varying intervals of time between successive precipitations agree with the requirement that ThX is being continuously produced by thorium compounds at a constant rate. The rate of production of ThX and the rate of decay of its activity are apparently unaffected by known agencies. Both changes proceed independently of the chemical and physical conditions of the molecule. The source of the energy required to maintain the radio-activity of thorium over indefinite periods is, therefore, to be found in a chemical change producing new types of matter.—*Proc. Chem. Soc.*, **18**, 120.

CHEMISTRY OF DORSTENIAS.

The root of the Gaboon ivy, *Dorstenia klaineana*, is found by E. Heckel and F. Schlagdenhauffen to contain a coumarin body, with a hay-like odour, having the composition, $C_{12}H_5O_3$, and melting at 180° C. This has been named pseudo-coumarin. It is obtained from the petroleum-ether extract of the root. The alcoholic extract, afterwards obtained, contains resins and tannin. *Dorstenia brasiliensis* yields a petroleum ether extract which contains crystals melting at 189° C. The resinous matter, soluble in chloroform, is similar to that obtained from *D. klaineana* The coumarin-like odour of the last-named root, when dry, distinguishes it, at once, from the root of *D. contrayerva* and *D. brasiliensis.*—*Pharm. Centralh.*, **43**, 70.

FERMENT OF THE PANCREAS.

Dr. H. M. Vernon shows that the tryptic ferment is an extremely unstable body, since from 70 to 80 per cent. of the amount present in a very active extract of the pancreas may be destroyed in an hour by 0·4 per cent. of sodium carbonate at 38°. The activity of such extracts also deteriorates gradually on keeping for weeks, but the trypsin remaining is more and more stable with the lapse of time, the last portions being from ten to twenty times more stable than the first. It would appear, therefore, that the ferment is not a single substance, but that there may exist series of trypsins of varying degrees of stability. There are also series of rennins, but not of diastases, though the diastasic ferments of the pancreas, of saliva, and of malt differ from each other considerably in their hydrolysing action on starch. The rennet ferment was found to have a zymogen very similar to that of the tryptic ferment, whilst the zymogen of the diastasic ferment is an insoluble body. In the conversion of tryptic zymogen into enzyme the most energetic agent was found to be the enzyme itself, the addition of 1 per cent. of an active extract to a solution of zymogen at 38° sufficing to convert one-third of the zymogen into enzyme in an hour. The tryptic ferment, curiously enough, can also liberate the rennet ferment from its zymogen, though the rennet ferment itself fails to produce the same effect.—*Journ. Physiol.*, through *Nature*, **66**, 87.

AMERICAN COLOPHONY.

W. Fahrion finds that American colophony consists chiefly of silvinic acid, $C_{20}H_{30}O_2$. It exists in the form of an amorphous modification, which, by treatment with aqueous alcohol or by the action of gaseous HCl, is converted into the crystalline form, which shows a higher melting point. This, by long heating, is again transformed into the amorphous condition. Silvinic acid has two double linkages, and, consequently, the free acid and its salts undergo oxidation on exposure to the air, forming the oxides $C_{20}H_{30}O_4$ and $C_{20}H_{30}O_6$, which are insoluble in petroleum ether. Both are readily converted into the oxy-silvinic acids, $C_{20}H_{29}(HO)O_3$ and $C_{20}H_{20}(OH)_2O_4$, which are soluble in that solvent. Both these last-named acids occur, in varying proportions, in commercial American resin. Oxidation, however, does not stop here, both these oxysilvinic acids being capable of further oxidation. Dioxysylvinic acid takes up another atom of oxygen, forming a peroxide insoluble in petroleum ether, while tetraoxysylvinic acid also becomes further oxidised, losing water and forming another insoluble peroxide. When sylvinic acid is oxidised with $KMnO_4$, in addition to these and other products of auto-oxidation, an acid which is probably tetrahydroxy-sylvinic acid, $C_{20}H_{30}(HO)_4O_2$, is formed. The author finds that the formula $C_{19}H_{28}O_2$, attributed to abietinic acid by Mach, is incorrect.—*Chem. Centralblatt*, **73**, 120, after *Zeits. für Angew. Chem.*

RADIO-ACTIVITY OF URANIUM.

F. Soddy states that the uranium from which UrX, prepared by Crookes' original method (*Proc. Roy. Soc.*, 1900, **66**, 409), has been separated is inactive to a sensitive photographic film, but its activity to the electrometer is very nearly normal, while UrX is intensely active to the photographic plate, and almost inactive to the electrometer under ordinary circumstances. This is due to the dual character of uranium radiation. The α- or easily absorbed radiation being without appreciable action on the photographic film, and contributing by far the major portion of the ionisation effect observed by the electrometer. The β- or penetrating radiation, on the other hand, causes the whole of the photographic effect, but being little absorbed by gases, and constituting but a small proportion of the total radiation, its ionisation effect cannot be well observed by the electrometer without special arrangements. UrX possesses all the β- with none of the α-radiation, the latter being completely retained by the uranium. The β- is wholly deviable in the magnetic field, the α-radiation not at all, the conclusion of Becquerel that the whole of the uranium radiation is deviable in the magnetic field being thus explained. The discovery of Becquerel that inactive uranium recovers its activity with time points to a continuous production of UrX by the uranium, and, as a matter of fact, continuous production can be observed by means of the β-radiation in uranium originally freed from UrX after three days. As in the case of thorium the α-radiation of uranium constitutes a residual activity comprising only non-deviable radiation, and it has not yet been found possible to remove it by chemical means. Experiment shows that, if it is a secondary radiation caused by UrX, it must take over a year to decay to half its value after the exciting cause has been removed. It seems, therefore, more probable that it is caused by a second type of non-uranium matter, produced from the uranium by the same change as the UrX.—*Proc. Chem. Soc.*, **18**, 121.

PREPARATION OF SUPPOSITORIES

L. F. Stevens is of opinion that, in making suppositories, it is very important as a time saver and for complete and intimate admixture of the ingredients to have the cacao butter in a finely grated condition. As the form of medicament employed in suppositories is always more or less potent, it is important that the drug should be thoroughly distributed throughout the mass, and it is advisable where a small amount of alkaloid, for example, is ordered, to first triturate it thoroughly with sugar of milk, lycopodium, starch, or some other inert powder, in quantity sufficient to bring the total weight of added powder to 10 or 20 grains, according to the number of the suppositories to be dispensed. The trituration should be mixed intimately with the excipient by means of a flexible spatula in a mortar of suitable size. Having, say—for twelve cones of 15 grains each—40 to 60 grains of material in which the medicament is well distributed, this can be rapidly diluted with the balance of the suppository mass. Where the suppositories are to be made by hand, it will be found advisable to add 10 minims of castor oil to each 100 grains of mass, and proceed first as in making a pill mass. This quantity of oil is intended for use in a work room having a temperature of between 17 and 21° C. Where the temperature is higher, and at the bedside of the patient, less oil is needed, until at 29° to 32° C. no softening is necessary, as the friction of pestle against mortar will be found to generate heat sufficient to partially melt the mass. In the summer months it will be found advisable to rest the finished suppositories on ice for a short time before sending out. In manipulating the suppositories, after a good mass has been prepared of the right consistency, proceed to lengthen it by pressure in the hollow of the hand; wrap the pipe in a clean piece of cloth and by hand pressure on the counter roll the mass out, while still in the cloth, to the length desired; then unwrap and finish the pipe by hand and spatula on a tile or pill machine, using starch or lycopodium as a dusting powder. On a graduated tile or pill cutter, gauged for 5-grain quinine pills, cut at every third line for a 15-grain suppository; for 30-grain suppositories cut at the fourth line. Then shape with two spatulas, one to keep the butt end well set up and the other to form the mass into a cone. When suppository moulds are used it is usually necessary to apply gentle heat to the mixture of cacao butter and medicament made as already described, but in the case of some drugs, *e.g.*, carbolic acid, creosote, guaiacol and ichthyol, heating is not advisable. Ichthyol can be made into a mass in the cold with 25 per cent. of cacao butter. In the case of carbolic acid, a nice suppository can be made by using lycopodium to absorb the liquefied acid in the proportion of 6 minims of the acid to 10 grains of lycopodium, and massing with cacao butter, 50 grains. Creosote can be made into a mass with sodium benzoate, which absorbs the liquid perfectly. Thus, take of creosote, 5 minims; sodium benzoate, 15 grains; cacao butter, 20 grains. Triturate thoroughly, and allow to stand for a few minutes, then compress and mould by hand or machine. Chloral hydrate suppositories are best made by triturating the drug with sugar of milk, equal parts, and massing with a melted mixture of cacao butter 80 parts, white wax 20 parts.—*Amer. Drugg.*, **40**, 189.

SOLUBILITY OF COMPRESSED TABLETS.

A. M. Hance points out that the distinct advantage of compressed tablets over other forms of medicine lies in the fact that, when properly made, they present drugs in an accurately subdivided and soluble condition, the term solubility as applied to tablets indicating power to disintegrate rather than power to form solutions. It refers to the tablet mass solely, the medicament of which is frequently one or more insoluble drugs as, for example, calomel, charcoal, etc. Firmness, or that degree of hardness which gives form and permanency to tablets, is essential in all well-made tablets, but neither prevents nor assures solubility. A tablet which may be readily crushed with the fingers may or may not possess the proper degree of solubility, while it is generally not firm enough to be especially serviceable. A tablet is said to be soluble when, in the presence of the proper medium, it promptly disintegrates, thus liberating in a minutely subdivided condition the medicament it contains. The degree of solubility is easily influenced by the nature of the component part. Thus solid extracts, resinous substances and drugs such as reduced iron or corrosive sublimate make tablets which disintegrate more slowly than others containing dissimilar substances, while tablets of corrosive sublimate are rendered more freely soluble than they would otherwise be by the addition of substances which favour solution, as, for example, ammonium chloride. In certain tablets solubility is relative, and quite unavoidably so. In others it is intentionally of slow degree, throat tablets, in which by slow disintegration a continued local effect is sought, being familiar examples of the latter. On the other hand, rapid disintegration and solution are especially desirable in tablets for making extemporaneous solutions, and in hypodermic tablets. To determine the solubility of a tablet, drop it into a quantity of water and note how soon the form of the tablet changes and disintegration follows.—*Am. Journ. Pharm.* **74**, 80.

EXTRACTUM BELLADONNÆ LIQUIDUM.

BY ARTHUR W. NUNN, F.C.S.,
Pharmaceutical Chemist.

The paper by Mr. Andrews read before the Chemists' Assistants' Association, and reported in the *Pharmaceutical Journal* of April 19 (p. 336), has led me to make further investigations on the above subject, and for this purpose 2 lbs. of belladonna root was reduced to about a No. 20 powder, but not sifted, and equally divided. One portion was treated strictly as directed in the B.P., the four percolators consisting of lamp-glasses, fitted with a piece of glass tubing (see illustration); to the end of each was a piece of rubber tubing, which was tied or released as required, the percolates being collected in 1 oz. quinine bottles. The B.P. process is somewhat long and tedious (it took ten days to finish), and after the expenditure of far too much alcohol, in my opinion, 6½ ozs. were finally collected and set aside ready for assaying.

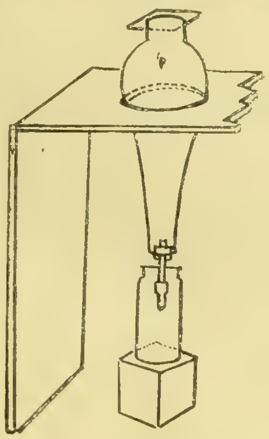
I next tried the following process:—The remaining pound of belladonna root was moistened with 12 ozs. of the B.P. menstruum, and set aside in a covered vessel for twelve hours. It was then packed tightly and carefully in an ordinary percolator, more menstruum added, and the lower orifice of the percolator shut off for another twelve hours. It was then started, and as soon as the liquid began to pass more menstruum was added until 8 ozs. were collected, which was returned to the upper part of the percolator, and the process repeated for three or four times. The final percolate was then set aside, the marc pressed, and the pressings added to it. The marc was next turned into a dish treated with four or five successive 10 ozs. of warm water, and pressed each time, the pressings mixed and carefully evaporated to as low a bulk as possible, using a water bath towards the end of the process.

In my experiment I brought it down to 3 ozs., but it could have been taken lower with safety; indeed, this should have been done, as I found later that I had very nearly overstepped the mark. This portion was then added to the previous percolate, and set aside. In all it measured 330 C.c., and there was a deal of precipitate, as might be expected, on mixing the aqueous and alcoholic portions. This, however, quickly deposited, leaving a clear liquid, but darker than that obtained by the B.P. process. The percolates by the two processes were then assayed as follows:—

Strong Extract.			When Diluted to B.P. Strength.			
Experiment.	Percentage Alkaloid.	Average.	Specific Gravity.	Percentage Extract.	Ratio Solids to Alkaloids.	Quantity of Finished Extract Produced.
B.P.	1·03 1·05	1·04	0·920	10·8	14·4 to 1	242 C.c.
Modified	0·75 0·75	[*]0·75	1·036	26·64	35·52 to 1	310 C.c.

[*] By a coincidence the strength was correct without further dilution.

It will be seen by the above data that the drug is better exhausted by the modified process, producing 310 C.c. of standardised liquid extract as against 242 C.c. by the B.P. process. One drawback in the modified process is the larger proportion of solid matter and the colour of the finished article, which is darker, but, taking into consideration (1) the time (it takes three days, including assay and adjusting), (2) the considerable saving in alcohol, and (3) the increased quantity of finished product, I see no reason why a process somewhat after this method should not be used or, at any rate, carefully considered by the compilers of the next B.P.



I do not quite agree with Mr. Andrews that it is unnecessary to check the gravimetric determination of the alkaloids by a volumetric one, as I found in each case the results give a rather higher figure by volumetric estimation than that found by weight, and, although the results are not quite concordant, the volumetric determinations formed a check on the work of the gravimetric, for, unless the volumetric determination gives a trifle higher figure than the gravimetric, the result is not to be relied on. To bear out this statement I tried the following experiment:—0·1 gramme of atropine sulphate was taken, dissolved in 5 C.c. of water, in a separator, made decidedly alkaline with ammonia, shaken out with three successive quantities of chloroform, and evaporated to dryness. The following were the results.

Quantity of Atropine Sulphate taken.	Calculated Quantity of Atropine (Alkaloid).	Found by Gravimetric.	Found by Titration.
0·1	0·036	0·080	0·089

The opinion of others who have worked on extractum belladonnæ liquidum would be useful and, no doubt, welcome to many, as it would be to myself.

AN APPARATUS FOR THE CENTRIFUGAL SEPARATION OF IMMISCIBLE SOLVENTS.

BY E. C. SPURGE, B.SC. (LOND.), A.I.C., PHARMACEUTICAL CHEMIST.

When extracting organic liquids with immiscible solvents, as in the determination of alkaloids, it very frequently happens that the solvent becomes more or less emulsified, and may require a considerable amount of time before a separation can be effected.

In many cases the bulk of the solvent separates fairly rapidly, but after this has been drawn off the remainder requires to stand some time before it can be separated.

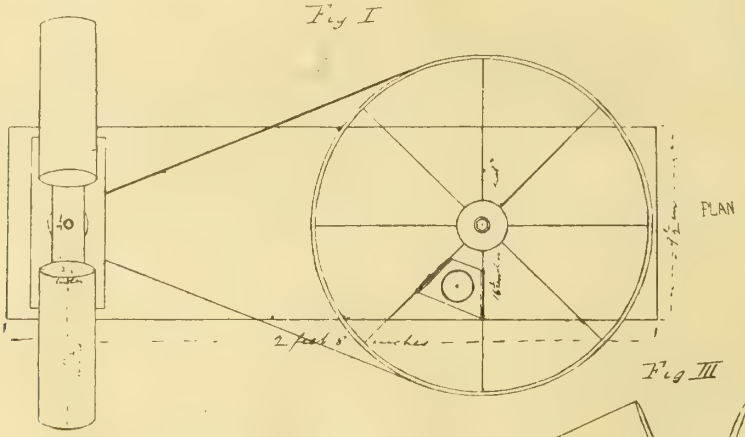
In order to obtain a rapid and complete separation, I have constructed an apparatus and tried centrifugating the mixture of liquid and solvent. The results obtained have been very satisfactory. Separation is rapid, and the separated solvent is clean; besides, two determinations can be done simultaneously. By aid of this apparatus a determination of ext. bellad. liq., B.P., can be begun, the eight washings performed as directed in the B.P. (washing with ammonia water is unnecessary) and the choloroform set to evaporate within twenty-four minutes.

The determination of citral, eugenol, etc., by absorption, in Hirschsohn's flasks, is both expedited and made more accurate by use of the apparatus. If after the absorption is complete the flasks be filled up and then whirled for about two minutes, all the oil is forced up into the neck, and a clean surface of separation is obtained. It is, however, necessary to use stronger flasks for this treatment than those usually sold, for they will not stand the pressure.

Since I am unaware that an inexpensive centrifuge suitable for the purpose can be obtained commercially, I hope that the following description of the apparatus may be of use to such readers of the Journal as have frequently to employ immiscible solvents.

Fig. 1 is a plan of the apparatus. The base-board is of well-seasoned wood, 1½ in. thick. The driving wheel is a steering wheel such as was used in old tricycles, having thick spokes. The tyre is removed. A hole is made in the base-board about 9 inches from one end, and a hollow is cut in the under surface of the board, around the hole. Iron washers are placed on both sides of the hole, the axle of the wheel is passed through and nutted tightly down from the under surface of the board. The hollow is made there so that the nut may not project from the under surface.

Fig I



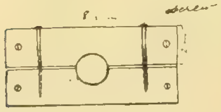
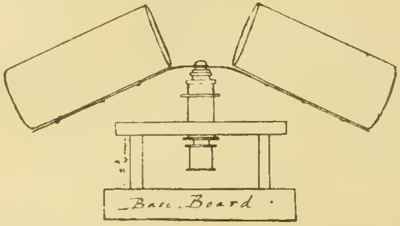


Fig II

Fig III



A thick piece of tin-plate is soldered to two of the spokes as shown. A hole is punched in it, and a stout brass rod dropped through the hole so as to rest when vertical upon one of the lower spokes (not shown in figure). The rod is secured to the spoke by wire and solder, and to the tin-plate by solder. The groove of a V-shaped piece of tin-plate is soldered to the lower spoke, and the two ends of the V are soldered to the edges of the top plate.

A large cotton reel or perforated wooden bung slipped over the brass rod serves as a handle. The bearing for the revolving cases is an old bicycle hub clamped between two pieces of ¾-in. elm (Fig. II.), mounted on the base-board as shown in Fig. III. A disc-adjusting hub is best, but a cone-adjusting one will do. An ordinary cotton-reel (about 1 in. diameter) is screwed to the lower end of the spindle to serve as a pulley.

Washers are placed at the top end of the spindle, and the cases are nutted down upon them. The cases for containing the separators are made of tin and rivetted upon a piece of 1½-in. hoop-iron. They should be lined with stout paper, and have a plug of cottonwool at the ends. The driving-belt consists of two Helvetia laces joined by small buckles. To join these no stitching is required; a hole is made in each end of the lace, and the two ends are then slipped over the pin of the buckle. The belt should be kept tight, and a sprinkling of resin is useful to prevent slipping. The whole apparatus when required for use is fixed to the bench by means of ordinary iron clamps.

As will be seen from the figures, the cases can be readily removed and various sizes used. It is, of course, better to work with as small ones as possible, since then greater speed can be attained. Those shown in the figure are about as large as can be conveniently used with a driving-wheel of the diameter shown. They will accommodate two Hirschsohn's flasks or two 100 C.c. pear-shaped separators. For alkaloidal work only, smaller cases are preferable. The outlet tube of the separators should be cut off close to the tap so as to bring the contents as far away from the centre as possible when centrifugating.

In practice I have found it best to centrifugate for about 20 sec., to draw off the separated liquid as far as possible, and then to whirl for 20-60 sec., when the remaining solvent can generally be drawn off quite clear. The two arms of the centrifuge must be approximately balanced when in use.

Fitted with cases of suitable size, the apparatus has been used with good results for determining fat in milk by the Leffmann-Beam method, and with the small cases here used a speed of 2,000 revolutions per minute can be attained.

The apparatus is strong, not difficult to make, and should be quite inexpensive. The bicycle hub and driving-wheel can be bought cheaply from almost any cycle repairer, whilst the Helvetia lace and buckles can be obtained from a saddler's.

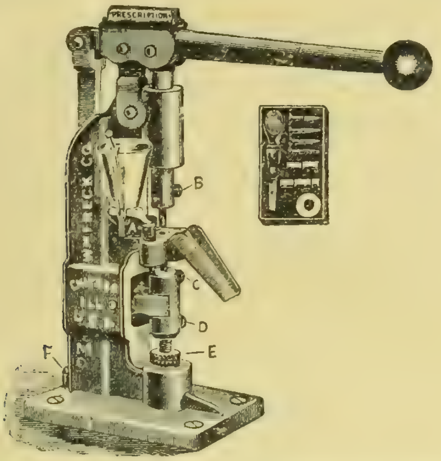
Glycosal.—The glycerin ester of monosalicylic acid, in the form of a white, crystalline powder, melting at 76° C., soluble in 100 parts of cold water, is introduced as an antiseptic and anti-rheumatic. It mixes well with glycerin, and is partially saponified by alkalies and alkaline carbonates. It is stated to possess all the therapeutic activity of salicylic acid, without causing digestive derangements, and not giving rise to tinnitus.—*L'Union Pharm.*, **43**, 156.

THE PREPARATION OF COMPRESSED TABLETS.

BY J. A. FORRET.

"*I have never felt kindly towards the idea of a pharmacist buying supplies that he can make himself.*"—PHARM. JOURNAL, **56**, 383.

A very useful series of articles on the preparation of compressed tablets has recently been contributed to the *Pharmaceutical Journal* by "An Ordinary Pharmacist," and, so far as the manipulation of a large number of drugs, both simple and compound, is concerned, the author practically covers the whole ground. He also describes a number of compressing machines, but says very little about their little peculiarities. On the invitation of the Editor, therefore, I have pleasure in noting some of my experiences with the Freck Prescription Tablet Machine.



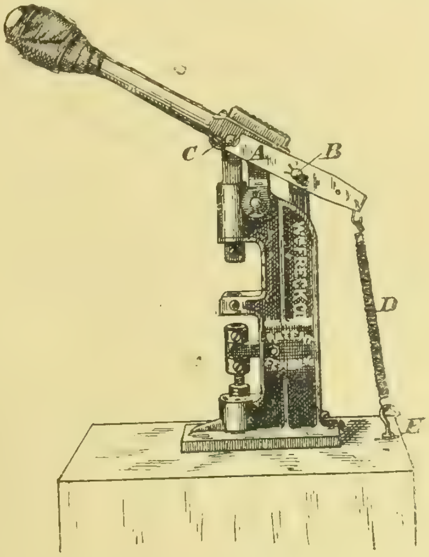
THE FRECK (No. 1) TABLET MACHINE.—A represents the feeder which contains the powder and fills the dies. B is a set screw which holds the upper compressor. C is a set screw which holds the lower compressor. D is a set screw which prevents the regulator from moving. E is the regulator for making various thicknesses or weights of tablets. F is the adjusting screw for stopping the lower compressor exactly even with the surface of the die to allow the tablet to be swept off smoothly by the feeder. Between B and C is another set screw which holds the die.

When the machine was unpacked the first thing that arrested attention was a deep indentation on the lower part of the feeding funnel. I concluded that, through insufficient packing or rough handling, it had suffered in transit, and immediately set about straightening the "damaged" funnel. On fitting up the machine, however, I discovered that I had been rather hasty, as the depression referred to was necessary for clearing the upper compressor when the funnel was swung round. It required considerable re-modelling and soldering before it was fit for use.

The machine must be fixed to a stand of some sort; the floor is too low and the counter is too high for convenient working. It is better to have it fixed to a strong wooden box of suitable height than to a fixed stand; with the former it can be worked in any position in any convenient part of the shop. Further, the movable box-stand is a convenient place for keeping the spare dies, etc., the materials for burnishing, and also for the necessary tools, such as screwdriver, pliers, etc.

In the "Freck" machine the tablets are thrown out by raising the lower compressor. This is effected by a small metal lever, one end of which grasps the socket into which the lower compressor is fixed, the other end being attached to a vertical rod connected with the back of the handle. The projecting arms are not fitted to the socket, but left merely as a rough casting, with the edges of the arms uneven. The result in my case was that practically all the lifting was done by one arm, which ultimately snapped. The agents kindly supplied a new lever free of charge; before using it, I removed the inequalities from the arms with a file, and have had no difficulty with it since.

In a short letter (see *ante*, page 108) I referred to two objectionable features of the handle of the machine, and showed how they could be overcome. There may be other, and possibly simpler, methods of combating these shortcomings, but the remedies I adopted were practically successful. The tension of the spiral spring must be adjusted so as to allow the lower compressor to fall back into its place, and at the same time maintain the upper one sufficiently high to clear the feeding funnel when the latter is wheeled round. With some drugs, especially those of hygroscopic nature, there is a tendency of the lower compressor to stick in its descent after throwing out a tablet; with the spring counterpoise the handle may be allowed to drop by its own weight, in which case the lower compressor rarely fails to fall. The chief advantage of the balanced handle, however, lies in the ease with which the machine can be worked continuously for, say, an hour or more.



The cut is from a photograph of my machine, and shows the bandaged handle and spiral spring in position. The metal arm (A) is drilled in the middle, and at each end; the middle hole passes over the end of the bolt at B, one of the end holes over that at C, and the spring D is attached to the other end; the other end of the spring is slipped over a brass hook screwed into the stand at E. It is convenient to have a short length of chain attached to the lower end of the spring; by use the spring loses some of its elasticity, and the tension is easily adjusted by hooking the chain one or more links lower down.

Some drugs are very prone to adhere to the compressors; a small rough patch on the face of a compressor is sometimes sufficient to pick a tiny piece from the surface of a tablet, and, if not detected and removed, each successive tablet adds its mite to the nucleus thus formed. The surfaces of the compressors must be well looked after; when not in use they should be taken out of the machine, thoroughly washed and dried, rubbed over with vaseline, wrapped in paper and put into a small box kept for the purpose. Polishing the compressors may be done by hand; emery in very fine powder is applied along with a little oil by means of a small piece of hard wood which has been made to fit the concavity of the compressor. When indented or otherwise damaged, they may require dressing on a lathe with a steel tool, followed by emery powder. When this is the case, care should be taken to maintain the original diameter of the compressor. I have found a very excellent burnisher in one of the balls from the bearings of a bicycle. It is fixed into a hemispherical hole in a small piece of hard wood, which forms a handle, and is pressed against the face of the compressor, after treatment with emery, a little oil being used as a lubricant. The result is a very high polish; and if a piece of rotten stone be applied after the steel burnisher the face of the compressor presents the appearance of a brilliant concave mirror. With granules in proper condition for compressing, such burnished compressors will turn out many hundreds of tablets with bright polished surfaces. This burnisher, however, can only be successfully used when the compressor is rapidly revolving in the movable chuck of a lathe.

Regarding the preparation of granules, "An Ordinary Pharmacist" directs the pasty mass to be passed through a sieve and then dried. I have found it more satisfactory to dry first, then powder carefully and sift. He gives directions for preparing bismuth and sodium salicylates for the machine. Are the tablets satisfactory? Are they free from iron salicylate round the edges? Is it possible to compress salicylates satisfactorily otherwise than by using plated dies and punches? What is the best method of treating saccharin? The tablets should be soluble. Is the alkaline carbonate present in the tablet as such, or is the reaction between it and the saccharin completed before granulation? I am sure many of your readers would be interested to hear what any pharmacist has to say regarding the above points. I frankly admit that I have not been successful with either saccharin or sodium salicylate.

A NEW PROCESS FOR THE MANUFACTURE OF CITRIC ACID.

BY DR. J. OHLY, DENVER, COL.

The manufacture of citric acid from lemon juice as carried on in the United States, represents an important branch of industry, and is based upon a chemical process which has undergone but little change or improvement since its introduction. It is well known that the end product obtained in this process offers special difficulties in decoloration, and that the solid crystallised citric acid frequently exhibits the brownish tint of the original lemon juice, besides containing an appreciable quantity of lead, due to the use of crystallising pans which are commonly made of this metal.

The juice obtained from the lemons after concentration, usually in steam-jacketed copper vessels, contains from 56 to 58 per cent. of citric acid, always has a deep brown colour, and carries considerable albumen. The albumen is best removed by adding double the volume of water to that of the juice, when, on standing for twelve hours, the albumen separates out in the form of a dark brown powder, known as acid albumen. This is usually removed from the liquid by filtration or decantation. The filtrate obtained in this manner is, however, far from colourless, and retains its brownish tint throughout the process with great pertinacity. It is generally neutralised by adding sufficient whiting or levigated chalk to produce a creamy consistency and heating the mixture to boiling so as to effect complete neutralisation. The calcium citrate thus formed is difficultly soluble and is purified by washing with hot water, the cleansed product being then neutralised by adding sulphuric acid of 1·7 specific gravity. The calcium sulphate formed in the course of this reaction is then filtered off and the filtrate evaporated, when the remaining calcium sulphate separates out; this is removed in the same manner as before, while the acid liquid is concentrated, decolorised as far as feasible, and evaporated to the crystallising point, or made to granulate in a wooden vat containing an agitator.

The yield of this method is unsatisfactory, the loss in citric acid frequently amounting to from 15 to 20 per cent. of that originally present in the juice, while the operations involved offer great difficulties which can be successfully overcome only by an experienced operator. It is essential also that the lemon juice employed be treated while fresh, as it is liable to decompose under the influence of heat, forming aconitic acid ($C_6H_6O_6$), which is not readily neutralised by whiting. Malic acid ($C_4H_6O_5$), present as a natural constituent of the juice, also combines imperfectly with levigated chalk, so that the final acidity of the solution is readily explained by the presence of these two acids.

In order to show the points involved more clearly the chemical quotations representing the old process are given below:—

$$\text{I.}—3CaCO_3 + 2C_6H_8O_7 = Ca_3(C_6H_5O_7)_2 + 3CO_2 + 3H_2O.$$

Since citric acid is a tribasic compound, and the valence of the calcium atom is equal to two hydrogen atoms in two molecules of citric acid forming the tricalcic salt as shown above, while carbon dioxide is liberated and three molecules of water are produced.

After washing the calcium citrate thus obtained with hot water, it is decomposed by means of sulphuric acid, the reaction occurring under these conditions being as follows:—

$$\text{II.}—Ca_3\ (C_8H_5O_7)_2 + 3H_2SO_4 = 2C_6H_8O_7 + 3CaSO_4.$$

These equations, which represent in the main the old style of manufacture, must necessarily appear very simple, since they consist merely of transpositions aiming at the production of soluble and insoluble compounds, which are readily separated from one another. On the other hand, the point of neutralisation when bringing whiting together with the purified juice (equation I.), is ascertained only with difficulty by observing the effervescence produced on adding a small part of the mixture to some of the whiting. Similar conditions are involved in the second operation, represented by equation II., for the accidental addition of an excess of sulphuric acid has a damaging effect and must, therefore, be avoided most carefully. The usual test in an emergency of this kind consists in adding some of the filtered liquor to a strong solution of calcium chloride when, in case an excess of sulphuric acid is present, a white precipitate will appear after a few minutes' standing.

The following method, claimed by the writer as his invention, affords a much greater yield in citric acid than the old one, and is much more readily performed. It consists of the following observations and manipulations:—

When a concentrated solution of calcium chloride is gradually added to a solution of sodium citrate, the precipitate at first produced redissolves, but when agitated it suddenly forms a magma which becomes crystalline on the application of heat. It will be seen, when considering the reaction which takes place, that besides the tricalcic citrate produced in this manner, a solution of sodium chloride is also formed, which can be readily removed by filtering and subsequent washing with hot water.

$$\text{III.}—3CaCl_2 + 2Na_3C_6H_5O_7 = Ca_3(C_6H_5O_7)_2 + 6NaCl.$$

Taking advantage of this reaction, 50 cubic centimetres of concentrated lemon juice, containing, according to the citrometer-scale, 56 per cent. of citric acid, were diluted with 100 cubic centimetres of water and allowed to stand overnight. The liquid was then filtered to remove the acid albumen deposited, and the filtrate mixed with a concentrated solution of calcium chloride, all quantities of chemicals required for this

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* From the *Pharmaceutical Era.*

and the following operations having been calculated beforehand from the molecular weights given in equations IV., V., and VI., below. Since an excess of calcium chloride cannot possibly do any harm, as it is readily removed by subsequent washing with hot water, no special precaution is to be observed in this case. One and two-thirds ounces of caustic soda were then dissolved in water, and the solution gradually added to the mixture of juice and calcium chloride, so as to neutralise it, this point being readily ascertained by means of litmus paper, when upon stirring, the liquid quickly assumed the condition of a magma. The pasty mass was heated, transferred to a filter and washed with hot water in order to remove the salt in solution and a possible excess of calcium chloride. It was then placed in a large evaporating dish (porcelain), carefully neutralised with a calculated amount of sulphuric acid of 1·7 specific gravity, and the mixture gradually heated to the boiling point, so as to effect complete decomposition and saturation.

The specific gravity of the original concentrated sulphuric acid employed and subsequently reduced to the required degree showed a concentration of 65·9° Beaume, corresponding to 1·84 specific gravity or 95·60 per cent. sulphuric acid, and it was found that the desired gravity 1·7 indicating 77·17 per cent. sulphuric acid (H_2SO_4) could be readily obtained by mixing a measured quantity of the acid with nearly half its volume of water—that is, with the precaution of pouring the acid into the water and cooling the mixture subsequently.

The sulphate of lime produced as stated above by the reaction of the sulphuric acid with the tricalcic citrate, was then filtered off, and the filtrate heated, when much calcium sulphate came down; this was removed in the same manner as before. The brown coloured liquid thus obtained was mixed with animal charcoal, previously freed from phosphates. This purification was effected by adding 30 parts of dilute hydrochloric acid (one concentrated acid to three water) to 20 parts by weight of boneblack, boiling the mixture for fifteen minutes, filtering, washing thoroughly with hot water, and drying the remaining substance.

Of this material, now free from phosphates, about 10 grammes were used for decolorising the citric acid solution obtained from 50 cubic centimetres of the original juice. The mixture of purified boneblack and citric acid was kept at the boiling point for about fifteen minutes, and filtered, when the filtrate was found to be perfectly bright and clear. It was concentrated to the crystallising point by evaporation, and poured into a small wooden, not leaden, tray. Upon cooling, perfectly white crystals of citric acid soon separated from the solution.

The chemical equations involved and the molecular weights of the ingredients employed in this process are given below, so that no difficulty will be encountered in calculating the amounts required for successful operation.

$$\text{IV.—}\underset{480}{12NaOH} + \underset{768}{4C_6H_8O_7} = \underset{1032}{4C_6H_5O_7Na_3} + \underset{216}{12H_2O}.$$

$$\text{V.—}4C_6H_5O_7Na_3 + \underset{666}{6CaCl_2} = \underset{996}{2(C_6H_5O_7)_2Ca_3} + \underset{702}{12Na.Cl}$$

$$\text{VI.—}2(C_6H_5O_7)_2Ca_3 + \underset{588}{6H_2SO_4} = 4C_6H_8O_7 + \underset{816}{CaSO_4}$$

On examining these equations and the reactions represented it will be seen that the operations involved are much more satisfactory than those of the old process, little heating being required to effect decomposition, and the chemicals applied causing but very limited outlay. The main advantage of the new process, however, is to be found in the circumstance that the yield of citric acid is more satisfactory than in the other case—that the weight of the resulting acid closely approaches theoretical figures, and that the final product is of a decidedly superior character.

PERFUMES: THEIR ANTIQUITY AND USES, WITH FORMULÆ.

BY GRAHAM BOTT.

The employment of spices and dried flowers as perfumes is of very ancient origin, and probably their use as such dates back from the very earliest period of the existence of mankind. The art of extracting and fixing the evanescent molecules of fragrant odours emitted from aromatic and sweet-smelling substances is of more recent origin, and we are indebted to the enterprise and ingenuity of the modern chemist for those delicate odours which he in his laboratory is able to call forth by the union of certain elements, and which resemble and almost rival the old-time perfumes distilled from flowers. The perfume considered in its more extended sense—of plants usually consists of the essential oil or gum resin contained in their stems, leaves, flowers, seeds, etc.; these are always agreeable and aromatic. The synthetical perfumes of the chemist are more often derived from substances which cannot be described as fragrant, such material as the refuse of gasworks and the drainage of manure heaps being laid under contribution for the exercise of his skill. This fact excites astonishment when first expounded, but on thoughtful consideration, amazement gradually glides into wonder, and then wonder merges into admiration, until at last we arrive at the dead level of every-day thoughts. Science, after all, only accomplishes by known methods that which is performed by plants and animals by a process which is but imperfectly understood. Thus, the scientific chemist employs the same substances as the plants—the philosopher reveals his process, nature refuses to divulge her secret, and it becomes a question which is the more wonderful of the two.

The word perfume has a very wide signification, and is applied to all pleasant odours. Originally it had a more limited meaning. It is derived from the words *per fumum*, which signifies any sweet-smelling substance given off with the smoke. Thus, myrrh of the Sacred Oracles—which is considered to be the produce of *Amyris commiphora*, commonly termed Indian bdellium, or false myrrh — was used, mixed with other gum resins and with spices, as incense nearly 3,700 years ago; and we find Moses referring to it in Genesis xxxvii. 25, where he tells us that a company of Ishmaelites came from Gilead with their camels, bearing *spicery* and *balm* and *myrrh*, going to carry it down to Egypt. It is peculiarly interesting to note the derivation of the word myrrh as fabulously related by the ancient poets, who inform us that the plant received its name from Myrrha, the daughter of Cinyras, King of Cyprus, who became enamoured with her own father, and, after having accomplished her desire, fled to Arabia, where she was transformed into a tree, which tree still continues to be known by her name.

At a much later period mention is made of the Queen of Sheba giving abundance of spices and the wood of almug trees to Solomon. Although the almug tree is unconnected with the subject under consideration, it may interest the curious to point out that it is thought by some that this tree is a species of ebony, or Brazil wood tree; others consider that the red sandal-wood tree of India, *Pterocarpus santalinus*, Linn. (N.O. Leguminosæ), was designated by that name. Probably the latter supposition is correct, as the wood is close-grained, hard, and of a fine red colour, and thus peculiarly adapted for the uses to which it was put—such as the formation of pillars for the temples, and also for inlaying of harps and other stringed musical instruments used by the Hebrews.

The white sandal-wood, *Santalum album*, Linn. (N.O. Santalaceæ), was, and is, highly valued on account of its fragrance, and the Chinese at the present day burn it in their temples in honour of their gods. And so, throughout the ancient Hebrew writings, we find reference being constantly made to the employment of odoriferous substances in some form or other, frequently under the term *spicery.* These substances were not always employed for the sake of their sweet smelling properties alone; they had other very definite uses, and the ancients readily recognised this. Thus the Hebrews seasoned their meat with spice; with it they imparted what flavour they chose to their wines, perfumed their women, fumigated their beds and their clothes, and with it they also embalmed their dead bodies. From this it will be seen that spicery in those days embraced any aromatic substance.

The fragrant gums stacte, onycha (a species of wing shell which when burnt gives off an aromatic odour somewhat resembling the odour of musk), galbanum, with frankincense, were ingredients of the sacred perfume of the Jews, and their holy ointment was composed of calamus, myrrh, cinnamon, and pinguis. These are believed to be the most ancient formulæ for odorous compounds on record. Pliny mentions *pot-pourri,* and refers to stacte as a spontaneous liquid exudation of the myrrh tree. Musk is noticed by Aëtius, a Greek who flourished during the end of the fifth century, and who held the post of physician to the Court of Constantinople. This animal secretion is not referred to by any earlier author. It is said that the *pot pourri* Frangipanni was invented by Mutio Frangipanni, one of the earliest of the Roman nobles and a renowned alchemist, the plant whose scent he wished to imitate being known to botanists as *Plumeria alba.* The ancient Egyptians buried with their dead aromatic seeds, leaves and plants, and filled vessels with a mixture of odoriferous gums and spices, and interred these also with the remains of their kindred. One of these vases is shown to tourists at the old military fortress of Alnwick, in Northumberlandshire, and is said to have been taken from an Egyptian catacomb more than 3,000 years ago. It still evolves a pleasant odour, and thus affords evidence of the skill with which they prepared their perfumes and the remarkable persistence of their fragrance.

Frankincense and myrrh were the oblations of the ancients in their temples, and curious and strange though it may appear, this archaic custom is still observed by the Sovereign of England, and is presented annually on the Feast of the Epiphany in the Chapel Royal in London. King Edward VII.'s offering of gold, frankincense, and myrrh was *symbolically* presented for the first time in January, 1901.

These facts establish the antiquity of perfumes, and serve to illustrate the extensive and manifold uses of aromatic and sweet-scented substances employed in former ages.

Considered from a hygienic point of view perfumes are of much value; they not only mask offensive odours, but operate as true antiseptics and deodorants. A number of persons at one time were seized with unbounded faith in the virtues of perfumes in this respect. Thus, according to tradition, at the time a certain dreadful contagious disease was ravaging a Continental city, four men, under the pretence of rendering assistance to the sufferers, plundered the dead, and took advantage of the helpless condition of the sick. These ruffians did not contract the disease. They were ultimately caught and condemned to death. One alone ecaped the extreme penalty by confessing the means employed by which he and his companions avoided contagion. This proved to be a certain perfume, the composition of which he disclosed, and it was known afterwards as the "Four Thieves' Bouquet."

It is not intended to present an exhaustive account of the processes employed in the preparation of perfumes, many of which can only be profitably carried out on a large scale. Simple formulæ will be given, such as may be compounded in any pharmacy without the trouble of making numerous extracts, tinctures and spirits *et hoc genus omne.* Under each formula a few interesting particulars will be offered with reference to any ingredient entering into such formula.

General Directions.

(1) It is absolutely essential for obtaining the best results to see that all vessels are perfectly clean.

(2) Always employ alcohol, 90 per cent., deodorised by means of charcoal.

(3) When grain musk is used as an ingredient in liquid perfumes, first rub down with pumice stone, then digest in a little *hot* water for two or three hours, finally add to alcohol. The addition of two or three minims of acetic acid will improve the odour and also prevent accumulation of NH_3. Civet and ambergris should also be thoroughly rubbed down with some coarse powder and transferred directly to alcohol.

(4) Seeds, pods, bark rhizomes, etc., should be cut up in small pieces or powdered.

(5) Perfumes improve by storing. It is a good plan to tie over the mouth of the containing vessel some fairly thick porous material, and to allow to stand for a week or two in a cool place, instead of corking at once.

(6) It is perhaps unnecessary to add that as large a quantity as possible should be decanted, and then filter the residue. This obviously prevents loss by evaporation. Talc or kieselguhr (amorphous SiO_2) are perhaps the best substances to add to filter to render liquid perfumes bright and clear. This is more especially necessary in the case of aromatic vinegars.

(7) The word *otto* implies the essential oil.

Orris Tincture.

℞	Powdered orris	8 ounces.
	Alcohol (90 per cent.)	20 fl. ounces.

Macerate seven days, filter, and percolate residue with alcohol, sufficient to produce 20 ounces of tincture.

The King's Bouquet.

℞	Clove otto	10 minims.
	Bergamot otto	60 minims.
	Tonquin grain musk	1 grain.
	Coumarin	10 grains.
	Concentrated rose water (1 to 40)	1 fl. ounce.
	Benzoin tincture	1½ fl. drachm.
	Orris rhizome tincture	2 fl. ounces.
	Civet	2 grains.
	Almond otto	5 minims.
	Alcohol (90 per cent.)	8 fl. ounces.

Mix and digest for one month.

Civet is an unctuous, odoriferous substance obtained from the civet cat (*Viverra civetta,* Schreber), which is a kind of weasel. It inhabits Northern Africa, and is domesticated for the sake of the perfume it affords. Another species (*Viverra zibetha,* Schreber), inhabits Northern Asia. The substance is secreted in a small sac, or pouch, placed near the posterior extremity. Civet enters as an ingredient in perfumes as a fixing agent, at the same time giving a distinctive character to the product.

Frangipanni Bouquet.

℞	Grain musk	10 grains.
	Sandal otto	25 minims.
	Rose otto	25 minims.
	Orange flower otto (neroli otto)	30 minims.
	Vetivert otto	5 minims.
	Powdered orris rhizome	½ ounce.
	Vanilla	30 grains.
	Alcohol (90 per cent.)	10 fl. ounces.

Mix and digest for one month. This is a lasting and favourite perfume.

Vetivert otto is the essential oil of the rhizome of the monocotyledonous plant *Andropogon muricatus,* Retzius; *Anatherum muricatum,* Beauv. (N.O. Graminaceæ), which is very common in Southern India and Bengal. The dried rhizome and rootlets, which are called *kus kus,* or *vittie vayr,* in the

Tamool dialect, are used in India for making scented baskets and large fans. The natives also cover a framework, made of bamboo, with the rhizomes, to form, for the doors and windows, screens. These when moistened emit a sweet-scented odour, and during the hot winds are constantly watered; thus the air is kept cool, and an agreeable fragrance imparted to it. This aromatic grass (cuscus grass) is sometimes grown in hothouses, and is easily cultivated. It is propagated by seeds and by division of the fibrous rhizome.

CANANG BOUQUET.

℞	Ylang Ylang otto	45 minims.
	Grain musk	3 grains.
	Rose otto	15 minims.
	Tonka beans	3
	Cassie otto	5 minims.
	Tincture orris rhizome	1 fl. ounce.
	Civet	1 grain.
	Almond otto	½ minim.
	Storax tincture	3 fl. drachms.
	Alcohol (90 per cent.)	9 fl. ounces.

Mix, and digest one month. The above is a very delicious perfume.

Cassie otto is derived from the flowers of *Acacia farnesiana*, *Mimosa farnesiana*, L. (N.O. Leguminosæ, sub-order Mimoseæ). It is a very pretty Australian acacia, and out of the many species this one is usually selected for cultivation in green-houses on account of the delicious odour of its golden-yellow blossoms, which somewhat resemble the odour of violets. The wood of this and other species of acacia is valuable by reason of its hardness and durability. It is used for making axle-trees and wheels.

Cassie otto must not be confounded with cassia otto, the essential oil obtained from *Cinnamomum cassia*.

YLANG YLANG.

℞	Ylang Ylang otto	10 minims.
	Neroli otto	5 minims.
	Rose otto	5 minims.
	Bergamot otto	3 minims.
	Grain musk	1 grain.
	Alcohol (90 per cent.)	10 fl. ounces.

Mix, and digest for a fortnight. More delicate than the preceding, but always popular.

Ylang Ylang otto is obtained from the flowers of the canang tree of the Moluccas, the alanguilan of China, *Mona odorata* (N.O. Anonaceæ). The word Ylang Ylang in the Tagal dialect signifies the "flower of flowers." Numerous other species of the various genera belonging to the Anonads produce powerful and delicious odoriferous seeds and flowers. These are much esteemed by the Malayanese women for making pomade with which they anoint their bodies. They also wreathe chaplets with the flowers for ornamenting their hair, and with them they erect triumphal arches in their marriage ceremonies.

IRIDIA.

℞	Coumarin	10 grains.
	Concentrated rose water (1 to 40)	2 fl. ounces.
	Neroli otto	5 minims.
	Vanilla	1 drachm.
	Almond otto	5 minims.
	Civet	1 grain.
	Ambergris	3 grains.
	Orris rhizome (powdered)	1 drachm.
	Alcohol (90 per cent.)	10 fl. ounces.

Mix, and macerate for one month. This yields a most characteristic and fragrant perfume and should enjoy a wide reputation.

Ambergris (ambra grisea, *i.e.*, grey amber) is a morbid secretion formed in the intestines of the sperm whale, *Physeter macrocephalus*, Linn. It is found floating upon the sea, or on the coasts of Brazil and Madagascar; also on the coast of Africa and in the Atlantic Ocean. It was at one time thought to be simply indurated fæces, and some surmised it to be solidified sea-foam. Its true source was established by Dr. Swediaur (*vide* 'Philosophical Trans.,' Vol. lxxiii.). Besides its use in perfumes ambergris is said to have been formerly employed for flavouring sauces and wines; thus Beaumont and Fletcher refer to it in the following lines:—

'Tis well, be sure
The wine be lusty, high, and full of spirit,
And amber'd all.

Considering its origin, most connoisseurs at the present time would much prefer their wines "unamber'd."

WHITE ROSE.

℞	Rose otto	25 minims.
	Rose geranium otto	20 minims.
	Patchouly otto	5 minims.
	Ionone	3 minims.
	Jasmine otto (synthetic oil of jasmin, Schimmel)	5 minims.
	Alcohol (90 per cent.)	10 fl. ounces.

Mix. Popular, delicate, and lasting.

The word *attar* or *otto* is derived from the Turkish word *itr*, which signifies *perfume* or *odor*. One thousand roses are necessary in order to produce two minims of otto.

IRANIAN ESSENCE.

℞	Bergamot otto	20 minims.
	Lavender otto	30 minims.
	Clove otto	20 minims.
	Sandal otto	30 minims.
	Almond otto	15 minims.
	Rose otto	25 minims.
	Grain musk	5 grains.
	Coumarin	10 grains.
	Alcohol (90 per cent.)	10 fl. ounces.

Mix, and macerate for a week or more. This essence is rather strong, a small quantity therefore should be made as an experiment, in case it is found to be too powerful.

JAVANESE BOUQUET.

℞	Rose otto	15 minims.
	Pimento otto	20 minims.
	Cassia otto	3 minims.
	Neroli otto	3 minims.
	Clove otto	2 minims.
	Lavender otto	60 minims.
	Sandal otto	10 minims.
	Grain musk	2 grains.
	Alcohol (90 per cent.), deodorised	10 fl. ounces.
	Water	1½ fl. ounces.

Mix, and macerate for fourteen days.

Cassia otto is obtained from *Cinnamomum cassia*, Blume (N.O. Lauraceæ), Cinnamon Cassia; otherwise known as Chinese Cinnamon, also termed China Cassia-lignea.

The word cassia is derived from the Arabic *katsia*, which is from *katsa*, signifying to strip or tear off; this evidently refers to the manner in which the bark is collected.

Large forests of cassia trees surround the principal city of the province of Kwangse, hence the Chinese have named that city *Kwei Lin Too*, which means the City of the Forest of Cassia Trees.

PATCHOULY EXTRACT.

℞	Patchouly otto	60 minims.
	Rose otto	10 minims.
	Limetta otto	5 minims.
	Alcohol (90 per cent.)	10 fl. ounces.

Mix.

Patchouly or Pucha-Pat otto is obtained from the Indian undershrub *Pogostemon patchouli*, Pellet. (N.O. Labiatæ). It presents a similar appearance to garden sage.

The dried leaves are sometimes mixed with tobacco to give an agreeable aroma in smoking, and the fine flavour and bouquet of some of the more expensive cigars is doubtless due to the presence of a small quantity of the otto. It is said that it is added to liquid Chinese ink in order to prevent mouldiness; if this be so it does not accomplish its object. One per cent. of formic acid sp. gr. 1·2 is more effectual.

In India the otto is freely employed by the natives for perfuming their garments, linen, shawls, etc.; to keep off insects and prevent the attack of moths.

A case illustrating the extreme sensitiveness to powerful odours, which some persons exhibit, is recorded in a French journal. It was that of a young lady who conceived an intense passion for patchouli. She saturated everything around her, from her linen to her furniture; and so immoderate was her use of this perfume, that she quickly lost her appetite, suffered from sleeplessness, and was ultimately reduced to a state of extreme nervousness.

Formulæ for lavender water and eau de Cologne are as numerous as the leaves on Vallambrosa, and as varied as the fragments of a rainbow; but the following recipe yields a lavender water of fine fragrance, and is one of the best that can possibly be made.

LAVENDER WATER.

℞ English lavender otto	2 fl. drachms.
Bergamot otto	1 fl. drachm.
Rhodium otto	5 minims.
Rose otto	10 minims.
Ambergris	5 grains.
Tonquin grain musk	1½ grain.
Alcohol (90 per cent.)	10 fl. ounces.

Mix, macerate for one month, and keep for two or three months before using.

LAVENDER WATER (Second Quality).

℞ Lavender otto (Exot.)	2 fl. drachms.
Rose water	2 fl. ounces.
Alcohol (90 per cent.)	10 fl. ounces.

Mix.

EAU DE COLOGNE (First Quality).

℞ Rosemary otto	10 minims.
Orange flower otto	25 minims.
Orange peel otto	20 minims.
Cedrat otto	25 minims.
Bergamot otto	15 minims.
Clove otto	3 minims.
Alcohol (90 per cent.)	10 fluid ounces.

Mix.

EAU DE COLOGNE (Second Quality).

℞ Rosemary otto	15 minims.
Lemon otto	1 fl. drachm.
Lavender otto	15 minims.
Bergamot otto	30 minims.
Orange peel otto	20 minims.
Orange flower water	2 fl. ounces.
Alcohol (90 per cent.)	10 fl. ounces.

Mix.

CARMELITE BALM WATER.

℞ Melissa otto	30 minims.
Sweet marjoram otto	3 minims.
Cinnamon otto	10 minims.
Angelica otto	3 minims.
Citron otto	30 minims.
Clove otto	15 minims.
Coriander otto	5 minims.
Nutmeg otto	5 minims.
Alcohol (90 per cent.)	10 fl. ounces.

Mix.

Angelica otto is obtained principally from the aromatic root of *Angelica archangelica*, L. (N.O. Umbelliferæ), which is commonly cultivated for the sake of the volatile oil which is yields.

Gerarde ascribed innumerable virtues to Angelica. He praises it as an antidote, as a prophylactic, and as a universal antiseptic, thus quaintly alluding to it:—

"The roote of garden angelica is a singular remedie against poison and against the plague, and all infections taken by evill and corrupt aire; if you do but take a peece of the roote, and hold it in your mouth, or chew the same between your teeth, it doth most certainly drive away the pestilentiall aire." In fact, the plant derives its name from its supposed angelic properties. And we may freely and safely concede similar virtues to the following novel preparation, much in vogue at one time, the recipe for which is given in the *Accomplished Female Instructor* for 1719, namely: "Angel-water, an excellent perfume, also a curious wash to beautify the skin. Prepare a glaz'd earthen pot, and put into it sixteen ounces of orange-flower water, a quarter of a pound of benjamine, two ounces of storax, half an ounce of cinnamon, and a quarter of an ounce of cloves grossly bruised, with three drachms of calamus aromaticus; set them over hot embers or a gentle fire to simmer or bubble well up; when about a fifth part is consumed, add a bladder of musk, and a few minutes after take it off and let it cool, pour it off by inclination from the settlings, and put it into a thick glass bottle; and of the dross you may make perfumed cakes, or sweet bags, to lay among clothes."

Particularly notice that a bladder of musk was to be used. Was it exceedingly cheap in those days, or were our ancestors unduly extravagant?

PHOTOGRAPHERS, PHARMACISTS, AND POISONS.*

There are pharmaceutical chemists, and there are chemists and druggists, but as there is on the whole practically no difference between the two, and none at all so far as poison regulations and sales are concerned, we prefer to use the term "pharmacist" as being the better and more apt title for the semi-professional gentleman whose occupation concerns rather the art of healing and the preparation of drugs than the science of chemistry. It was to pharmacists as a body, therefore, that legislation assigned the sale of certain widely-used poisons. When "restrictions" are mentioned in connection with what may be termed the poison controversy, it must not be forgotten that these apply *every time* to the *seller* only. We have very intimate knowledge of regulations enacted in all good (but perhaps blind) faith for the *sale* of poisons, but we never heard of any kind of regulation or restriction which is to be binding upon the user! For a great many years pharmacists have had an intelligent appreciation of the poison danger. There has been the poison cupboard, where all dangerous articles have been stored, but essentially devoted to such poisons as are enumerated in Schedule 1—*i.e.*, cyanide of potassium, corrosive sublimate, etc. There has also been a liberal use of proper labels and of blue fluted bottles, "distinguishable by touch," also attempts made to distinguish by sound, as witness the occasional use of corks with bells attached. In one pharmacy there are fitted up various little devices for the purpose of attracting special attention to sales of sundry poisonous articles. By a simple electrical attachment a bell is made to ring every time the poison cupboard door is opened; by a similar simple contrivance, the chief features of which are a double shelf, the top one hinged at a distance of about half an inch above the other, a spring just strong enough (the weight of the bottle being removed) to enable the shelf to rise and make contact completing an electrical circuit, it was found practicable to place certain poisons in such positions that they could not be disturbed without the fact being notified to the staff, and by selecting bells of different tone it was possible to tell by sound only what poison was being sold. For many years carbolic acid has been sold only in blue fluted bottles, distinguishable by touch, at a reasonable price, taking in exchange whenever practicable the ordinary bottle usually brought by the customer. As a matter of fact, "the order in council" relative to the storage, dispensing, and sale of poisons was anticipated by many years in every well-regulated pharmacy.

A correspondent of this journal, in a moment of inspiration, asks, "What further restrictions" (referring particularly to carbolic acid, but inferentially to other poisons) "are required if the chemists fulfil the conditions prescribed in its sale?" but, of course, being a non-pharmacist, altogether misses the point and moral of the situation, which is something of the nature of the "horse and the water." You may provide the customer with the bottle distinguishable by touch (though this is not required in every sale) and properly labelled, but you cannot ensure that he (the buyer) will retain it in that receptacle, and thus safeguard others. "A" sells "B," under the usual restrictions, a bottle of scheduled poison—weed destroyer, toothache drops, rheumatic oils, mercurial intensifier *et hoc genus omne*. "B" lends a little of the article to a friend, "C," pouring a little out of his bottle into another, anything handy, in fact, which is not distinguishable by touch, or even properly labelled. "C," in his turn, uses the stuff, and leaves it, or probably, the pressing need having disappeared, forgets all about it. Then comes "D," who finds what he imagines to be a palatable drink (as in the case of the weed destroyer in the beer bottle), drinks it, and, to quote the comic-song writer, his funeral's to-morrow! As a rule, the coroner manages to bring in some caustic remarks about the sale of poisons and restrictions, but never thinks or says a word relative to the culpability of "B," who, himself safeguarded, and, no doubt, in all good faith, and with no evil intent, has placed the life of another person in peril. If, by law, something could be done to ensure that certain poisons must not only be sold, *but kept by the purchaser*, in bottles definitely labelled and distinguishable by touch, the restriction would be of value, and might save lives. The position is one of difficulty. When we, on sadly rare occasions, stay at the seaside, we take our medicine chest with us, and how can we, a case of need arising, refuse the relief to others which access to the same affords? But if we give a little away in a bottle which, under the circumstances, cannot be properly labelled, we should feel morally responsible should harm come of it. An extremely painful incident in our experience was the following, which occurred many years ago: An amateur photographer, taking advantage of a fine day, and moved by a sudden impulse, got out his wet-plate kit, and set it up in his back garden; bath and chemicals were hunted up, and some cyanide fixing solution was mixed in a *tumbler*, and the latter placed for use upon a table standing in the garden. One of the children playing about saw the glass, and, taking it to be water, drank some of the contents! The tale need not be continued; it is a needless harrowing of the feelings.

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* From the *British Journal of Photography*.

That other restrictions are required is not to be disputed; but how they are to be employed, to say nothing about *enforced*, is the difficulty. It seems to us a matter for—well, almost regret, that there has been for many years an indiscriminate use of the poison *label*, the word, and the distinctive colour, has been applied to many articles outside of the schedule, quite properly in many cases, but in others unnecessarily. A note of warning that the article requires *careful* usage would in many cases answer the purpose. "Familiarity breeds contempt" even (this we honestly believe) of the poison label, but then we may say that all drugs and most chemicals require care in their use, and, equally, of course, they are not all poisons.

The difficulty, in this country, put in the way of prospective buyers of such poisons as corrosive sublimate is, of course, very real at times, and, from the users' point of view, extremely absurd. On the one side, that of the seller, it is enacted that the purchaser must be known to him or be introduced by a third person who is known to both parties. One experience of buyers of poisons is that, as often as not, when requiring to buy such a poison as that referred to, they go to a shop where they are least known, and repeatedly on asking, say, where do you generally get this? the answer has been "I usually deal with so-and-so." The remark, then, is to the stranger, "You will do best to go to so-and-so, who possibly knows you." What is the meaning of the term, "known to the seller." In any reply to this, every pharmacist will, of his own experience, give his answer; he has always somewhere in his mind's eye a vision of the coroner, and he knows of cases where, every restriction and condition of sale properly carried out, the seller has not escaped sometimes censure, or, at the least, the unpleasantness of the inquisitorial court. The coroner is, strangely enough, a man who knows apparently less about the poison regulations than any other professional man connected with law and medicine, and in his court it is not safe, if to be easily done, to put him right. A case has just occurred in our experience bearing on the same point: A pharmacist of our acquaintance sold, in entire good faith, some small quantity of strychnine for rat poisoning. There were said to be so many rats, and a sufficiency of poison was sold to meet the requirements, the book signed, and the sale witnessed. The buyer took some of the poison, an inquest was held, which our friend had to attend, forty miles from his home, a day at the least lost from business, which no witness fee would cover, and all the unpleasantness of seeing one's name in the papers—an altogether unsatisfactory result of a sale value sixpence gross!

Is it any wonder that many pharmacists make all sorts of excuses when poisons of this kind are asked for? To them it looks plainly on one side a profit of about two pence, against the doubt and uncertainty as to the *bona fides* of the purchaser, and all the unpleasant probabilities which may follow any indiscretion on his part. The photographer blames the chemist when he cannot buy his mercury bichloride as readily as his carbonate of soda, but, as a matter of fact, it is not the pharmacist who is the stumbling block; it is the mighty official beyond him. Buyers frequently resent the simplest inquiries which the seller is bound to make, as a gross impertinence. Some of them are quite ready to "sign the book," as though "Alfred John Feverdrop, of Luxington Gardens" meant anything of value to the seller, who never heard of Feverdrop, and does not know if there is such a place as Luxington Gardens! Others, again, are of different stamp, and a few minutes' chat, or less, convinces you that the purchaser is all right; he knows so-and-so, of the London and Provincial Society, and met someone else whom you know at the Royal, and so on, and the result is that in a short time he is no stranger, but has what he wants, and, in addition, the run of your dark room. Sellers do not like ignorant buyers, innocent amateurs who have heard that mercury bichloride is good for intensifying negatives, and they would like to try it. It is easy to see that they know absolutely nothing of what they propose to do, and the case assumes, therefore, if it comes to a sale, the appearance of placing in the hands of an ignorant person a powerful instrument of mischief—which is what it practically is. If there were any potent restriction, other than moral, which only appeals to the intelligent and educated, *on the buyer*; if one could ensure that the poison sold in its bottle distinguishable by touch, and with all the symbols of warning suitably displayed, would be retained therein, and carefully used and restored after use, the pharmacist (the seller, that is) would feel more at liberty to dispose of the stuff, he would do so, at the least, with more comfort than at present. The seller has got into a suspicious frame of mind with regard to these poisons, and with very good reasons indeed. He sees no money inducement in the sale whatever, but, on the other hand, much possible trouble in the future if anything goes wrong.

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THE SOCIETY'S ANNUAL DINNER.

The annual dinner of the members of the Pharmaceutical Society was held at the Whitehall Rooms, Hôtel Métropole, London, on Tuesday, May 27. The **President**, Mr. G. T. W. Newsholme, occupied the chair, while the chairmen of tables were the Vice-President (Mr. C. B. Allen), the Treasurer (Mr. S. R. Atkins), the Secretary (Mr. R. Bremridge), Mr. I. Bourdas, Mr. G. S. Taylor, and Mr. W. Warren. The gathering was, as usual, thoroughly representative, the attendance being, if anything, rather larger than usual. The official list of guests is given at the end of this report.

After an excellent dinner and the toast of "The King," the **President** proposed the toast of

The Houses of Parliament.

The President said there were present that night representatives of the House of Commons, but unfortunately the House of Lords was not represented at that gathering. He wished first to say a word or two with reference to the House of Lords. As would probably be remembered, some years ago the House of Lords was very severely criticised, and there was a strong feeling throughout the country that it ought to be ended, or at the very least mended. He did not think, however, that at the present time such a feeling existed, but rather a feeling that there is no reason either to end or mend the House of Lords. Perhaps he might be permitted to say why it should not be ended or mended. There might be some difference of opinion as to the way in which the House of Lords was created—of course, it was too far back to talk of its creation—but perhaps there might be some feeling that the House of Lords might be constituted somewhat differently than at present. There had been some exception taken because it was a hereditary chamber, but he thought they might be perfectly satisfied when it was considered how the House of Lords was improved and kept going, when it was remembered that year after year certain men were sent to the Upper Chamber from the House of Commons—from amongst the most distinguished men of the country—there was no reason why the House of Lords should be ended. And when they considered that such men as Lord Salisbury, Lord Rosebery, Lord Spencer, Lord Selborne, Lord Kelvin, Lord Lister, and many other distinguished men were members of the Upper Chamber he thought the country might be perfectly satisfied that there was a House of Lords, apart altogether from politics. In regard to the Lower House, it was sometimes said that the House of Commons is what the people of this country make it—even the members of the Council of the Pharmaceutical Society sometimes had to say "We are what you make us; if you are not satisfied, turn us out"—and if the people in any particular division were not satisfied with their parliamentary representative it was an easy matter to find some other gentleman who would be more amenable to reason, and who would do what he was told. He did not think they had any need to be ashamed of the House of Commons. It was representative of every class in the country—he did not mean that the rogues and vagabonds were represented, but he did mean to say that it was representative of all those who were worthy of being represented. There was one thing, however, he was not quite sure about, and that was whether those present that night were represented in the House of Commons. They might say that as pharmacists they had no direct representative, and knowing, as he did the work that the Pharmaceutical Society has had to do for a considerable number of years, he thought it would have been better for the interests of the public of this country if there had been someone in the House who knew something about the administration of the Pharmacy Acts. He did not quite know how it was to be brought about at the present time, because the House of Commons was elected by the two great political parties, and until societies such as the Pharmaceutical Society are able to send their own representatives there did not appear to be any means of getting represented in the House, unless some pharmacist was elected by one of the political parties. He hoped that someone of their craft might sink personal considerations and become a member of Parliament. It was highly important that the matter of the dispensing of medicines and the regulations for the sale of poisons should be considered in a reasonable manner. He did not want those outside pharmacy to run away with the idea that pharmacists want legislation solely for their own interests; legislation was necessary in the public interest. Since the Pharmacy Act of 1868 was passed the Council of the Pharmaceutical Society had been trying to get legislation in the House of Commons in various ways, hitherto unsuccessfully, with the exception, some two or three years ago, of an Act solely dealing with the Society's own affairs. But something more than that was wanted. He was speaking in the presence of two members of the House of Commons, and it might be that before long the Society would have to approach them to help to get through a Bill which was drafted some eighteen months ago, but which is now resting in abeyance awaiting the outcome of the Departmental Committee of the Privy Council, which has been inquiring into the matter of the sale of poisons. And he wished every pharmacist in that room to interest himself in the member of Parliament for his division, and to get him to take an interest in matters affecting pharmacy, letting him know that the Pharmaceutical Society does not exist for the good of pharmacists only, but that it is entrusted with a duty towards the public not only in seeing that drugs shall be properly dispensed, but also in regard to the sale of poisons. As he had already intimated, they had amongst them that evening two distinguished members of Parliament, Mr. W. F. Lawrence, M.P., of Liverpool, and Mr. Samuel Roberts, one of the youngest members, and the member for his (the President's) own division of Sheffield. He was glad to give those gentlemen a very hearty welcome, and to couple with the toast of the Houses of Parliament the names of Mr. W. F. Lawrence and Mr. Samuel Roberts.

G. T. W. NEWSHOLME,

President of the Pharmaceutical Society of Great Britain.

Mr. W. F. **Lawrence**, M.P., in responding, said he felt a little embarrassed at having to respond for the non-elective body, and also for the House of Commons. He could not help thinking that the reason he had been invited to that gathering was that for nearly seventeen years he had been the representative of that district of Liverpool (Abercromby) known as "The Valley of the Shadow of Death," and on that account it might be thought that the people of Liverpool did not sufficiently appreciate the medical profession. But he could assure those present that the people of Liverpool held medical men in the highest esteem. So much so that Sir William Banks had been pointed out as worthy of some appreciation of his great abilities. Speaking on behalf of the Upper Chamber, he thanked the President for his remarks concerning the House of Lords, and went on to say that although Englishmen valued most highly their democratic institutions they also appreciated the value of the House of Lords, which he hoped would have a happy and useful future. As for the House of Commons, he was very glad that the majority of its members were supporting the Government of Lord Salisbury, and were endeavouring to carry out what they believed to be for the best interests of the country. In regard to the Opposition, he must say that it had acted up to its historical tradition—to oppose—and had fulfilled that distasteful duty of finding fault with everything that the majority had endeavoured to carry out. Having referred to the war, which he was glad to think was drawing to a close, Mr. Lawrence said that apart from questions affecting the Sale of Food and Drugs Acts and other cognate questions, he had not had brought before him any matters concerning pharmacists, but after that night he should do his little best in the House to advance their interests in every possible way. Within the last year or so he had been entrusted with a measure of some interest to the medical profession, and if the members of the Pharmaceutical Society had any measure to bring forward, they had only to avail themselves of his humble services and he should be very glad to do what he could.

Mr. SAMUEL ROBERTS, M.P., also replied to the toast. He said he was elected to the House only three months ago, and he was present that night as the guest of the President, and as his member. The President had alluded to the fact that pharmacists ought to be represented directly by somebody in the House of Commons, and he quite agreed with him. Other bodies were represented, and there was no reason that he could see why pharmacists should not also be represented by someone who is acquainted with their needs and requirements. Mr. Roberts having referred to matters before the House at the present time, and to the working of the new rules of procedure, thanked the President and the Society for inviting him to the annual dinner, and said that he should be only too pleased, if the Society had any matters to bring before the House of Commons, to offer his humble services.

THE MEDICAL PROFESSION.

The VICE-PRESIDENT (Mr. C. B. Allen) said the toast which he had the honour to propose was one which would be accepted in any community of civilised people in any part of the habitable globe, and he was inclined to think that in a company of pharmacists it would have a very cordial reception. He was quite sure that those gentlemen of the medical profession who were present—he was glad to think there were a large number, and as pharmacists they were proud to welcome them—would feel some little gratification that a body of pharmacists, representing pharmacy from all parts of the country, were able to enter into their work and to wish them God-speed in it. For there were present that night pharmacists from the north of Scotland, various parts of England, good old Ireland, and the Colonies, so that he might say the pharmacists of the Empire were there to welcome the medical profession. Pharmacists were as well able as any other portion of the community to appreciate the work done by the medical profession of this country; they could sympathise with their difficulties and also enter into the joys of their successes. In fact pharmacists were co-workers with the medical profession, and those medical men who were present that night would be the first to admit that they have received important help from pharmacy in their work. He was one of those who believe that in the future pharmacists and medical men must work much more closely, hand in hand, than they hitherto have done. Of course, there must first be an advance in the education and training of the pharmacist, and there had already been an advance all along the line in that direction. Would-be pharmacists had now to pass a preliminary examination equal to that of the medical profession, and he hoped that the future would bring forth a set of men of equal standing with those pharmacists who had done so much to help the medical profession in the past. At the present time there were pharmacists in the large hospitals who were working hand-in-hand with the medical staff in bacteriology and other branches of science more nearly related to pharmacy. Pharmacists had always held out a helping hand to the medical profession. In the production of the present British Pharmacopœia the Pharmaceutical Society of Great Britain gave some help to the General Medical Council, and the Council of the Society was hoping to do a great deal more towards the production of the next Pharmacopœia. He ventured to think that the research work that had been done in the Research Laboratory of the Society was exceedingly valuable. There was one thing in regard to the medical profession that he would like to mention—viz., the fact that medical men had entirely abandoned the system of apprenticeship which produced the good old general practitioners. He was afraid that the coming medical men would be extremely well up in scientific matters, but entirely devoid of business knowledge. In that connection the Vice-President referred to the remarks of the late Mr. Cecil Rhodes concerning the dons and professors of the universities, and went on to say that he was inclined to think that the medical profession would be a great deal better if they knew a little more about business methods than they do. This was, of course, a matter for elementary education, because medical men were drawn from the very highest possible sources, but they appeared to come out of their curriculum without any knowledge of the world of business, hence they have to learn the best business methods afterwards. The Vice-President then went on to refer to the charlatanism that hovers around the professions of medicine and surgery, and to express the hope that the time will soon come when they will be free from all parasitical things. Speaking of the war, the Vice-President said that when the history of the war in South Africa has been written the medical profession would shine in that record, and he instanced several cases of bravery by medical men on the field of battle for which the V.C. had been awarded, referring more particularly to Major Batley, the son of a pharmacist, who was awarded the V.C. for his devotion to duty at the battle of Colenso. He coupled with the toast the names of Sir W. S. Church, President of the Royal College of Physicians, and Mr. H. G. Howse, President of the Royal College of Surgeons.

Sir W. S. CHURCH, Bart., in responding to the toast on behalf of the medical profession, thanked the Vice-President and those present most sincerely for the way in which the toast had been proposed and received. He said he always felt that in having to return thanks for the medical profession he had a hard task to perform, and he felt that much more on the present occasion, because he was speaking to an off-shoot of the medical profession—one who knew its weaknesses, and one of which the medical profession knew its weaknesses. It must have been many ages ago that work began to be specialised in the profession of medicine, as it seemed very hard to think of such men as Dioscorides, Mesue, and Nicolaus going out to collect their own simples. Going back several centuries, there was nothing that could be called an official pharmacopœia, as it was not until a much later age that anything like a collection of formulæ was published, and there appeared to be a doubt whether the first pharmacopœia was the Florence or the Nuremberg, which dated back to 1542, and from that time the rise of pharmacy might be said to have commenced. How far the pharmacy of to-day was in advance of those ages, the pharmacists present were better able to form an opinion than he. He felt, in speaking that night, that he was addressing one of the most important branches of knowledge of the present day. Everyone who was connected with medicine must thank the Pharmaceutical Society for the enormous improvement that has taken place in the drugs which physicians make use of. Since the Pharmaceutical Society had been in existence the purity, potency, and general utility of the drugs made use of by physicians were far in advance of those in general use prior to its existence, and they could now trust entirely to the preparations which pharmacists make in accordance with the B.P. But he had been a little astonished recently to find that British pharmacy was not as perfect as he had thought. He had been in communication with several analysts who had called in question a good many of the drugs of the B.P., and he learned with considerable surprise that he was in the habit of prescribing arsenic whenever he ordered ferrum redactum. Of course he was aware that arsenic had been found to be present in phosphate of soda, but he did not know that it was so prevalent in other drugs. It was not the fault of the Pharmaceutical Society, of course, but still he was much surprised, and he was reminded of what Sir Benjamin Brodie once said—viz., that the ablest prescriber was not he who had acquaintance with a large number of drugs, but he who knew how to make proper use of two or three. The number of drugs which were now placed before the medical profession was entirely bewildering to those who tried to keep up their knowledge of them. He must confess that he was content to keep to the old drugs. From the time we are born, said Sir William, to the time we die we are expected to use medicated foods and drinks. They might even be told that those who had partaken of the dinner that night had been guilty of the greatest folly. They might be told that the food should have been peptonised and predigested, and instead of finishing up with a good glass of champagne they ought to have medicated wine. He agreed with the Vice-President that it was extremely desirable that the medical profession should be better acquainted with the B.P. than they are. He must acknowledge that he and his colleagues, when examining men who were qualified, had been struck by the extreme ignorance they had presented of the B.P. They appeared never to make use of it, preferring, probably, to order predigested food and tabloids. His friend Sir Dyce Duckworth would bear him out in that, because recently when his friend was questioning a qualified man and was asking him questions concerning the preparations of the B.P. which, he must confess, he personally would not like to have been called upon to answer, he thinking it was hardly fair to the candidate to censure him for inability to answer those questions, asked him to write down in proper form prescriptions for a blue pill and a black draught, but he could not do it. He thought it was the duty of the medical authorities to direct the attention of the profession to the neglect of therapeutics, as he did not think they paid sufficient attention to the therapeutical effects of pharmaceutical preparations.

Mr. H. G. HOWSE, President of the Royal College of Surgeons, also replied to the toast. He said there used to be an opinion that surgery was merely concerned with cutting, and that medicine played very little part in surgery, but he pointed out that medicine is a material aid to practice, and in that respect he felt that the members of the surgical division owed a very great debt to pharmacists and to the Pharmaceutical Society for the way they had worked in the elaboration of not only those new drugs but also in the purification and the better pharmacy of the older drugs. They had been told that night that the medical profession were unbusiness-like, and he thought there was a great deal of truth in the allegation. They had also been told that the old apprenticeship system had been abandoned. He remembered that system because he served a two years' apprenticeship which consisted chiefly in dispensing, and he wished to bear testimony that those two years were not thrown away, but he felt that it was the most valuable training of his life. And if that was true of the surgeon, it would also be true of the physician.

THE COLONIAL EMPIRE.

Mr. S. R. ATKINS, Treasurer of the Pharmaceutical Society, proposed the toast of "The Colonial Empire," and in a long speech which, owing to the speaker's eloquence and patriotism, was listened to with deep attention throughout, he briefly traced the history of the various colonies and dependencies from 1583 onwards, referring to the work of such men as the brothers Lawrence, Grant, Nicholson, and Havelock, in India; to the millions of square miles of land in Canada awaiting colonisation, and to the future settlement of the South African colonies. Speaking of the British flag, he said he was proud of it, as he believed it to represent Christianity, and he was reminded of the poet who said "She is a gem set in the silver sea." When he thought of that beautiful idea, "A gem set in the silver sea," and of the minor gems that have gathered around the centre gem, he was proud of his country. Referring to the Australian colonies, Mr. Atkins said: "Addressing that gentleman who has honoured us with his presence this night, what have you sent us from Australia? You have sent us the most precious thing you had to give—you have sent us your sons to fight for us." That, said Mr. Atkins, is practical sympathy. He then went on to speak of the sons Australia had sent to England to wield the "willow" against her best cricketers, and in conclusion expressed the pleasure he felt in associating with the toast the name of a gentleman he would like to have the honour of calling his friend, because he was the son of a very old friend of his; he referred to the Hon. F. S. Grimwade, member of the Legislative Council of Victoria.

The Hon. F. S. GRIMWADE (Melbourne) said he felt so entirely carried away by the eloquent speech with which their friend Mr. Atkins had delighted them, that he could not do full justice to the toast he had proposed. It was a pleasure to him to be present that evening. He was in England five years ago, and had the pleasure of being present at the dinner of the Pharmaceutical Society when Mr. Hills so ably presided, and he felt it not only a great pleasure but a great distinction to be present and to have his name coupled with the toast. Although they in Australia lived at the very confines of the Empire, it was their pride to consider themselves Britons just as much as those who lived within the precincts of the throne. Referring to the war and to the Australians who had gone to the front, and to the men who had fallen, Mr. Grimwade said he was inclined to think that they left a halo around their lives that would endure as long as the Colonies. He then went on to refer to the large tracts of land in Australia awaiting settlement, and he expressed the opinion that the present population of four millions could with advantage to all be very well increased to twenty millions.

THE PHARMACEUTICAL SOCIETY OF IRELAND.

The PRESIDENT said he now had to propose the toast of "The Pharmaceutical Society of Ireland." It was not necessary for him to make a long speech in proposing that toast, but he was very glad to have the opportunity of doing so. A considerable number of years had passed since the President of the Pharmaceutical Society of Ireland was amongst them, the last occasion being, he believed, when the late Mr. Robert Downes was President; hence it gave him very great pleasure to welcome Mr. G. D. Beggs, the present President of the Society. Those gentlemen who had the good fortune last year to spend some time in Ireland in the company of the President of the Pharmaceutical Society of Ireland—he meant with the British Pharmaceutical Conference, which he had the misfortune not to be able to attend—enjoyed themselves very much indeed, and it gave them much pleasure to welcome Mr. Beggs amongst them that night. He did not wish to differentiate between the position of the two Societies; they had very much in common, and although they differed in some respects they were perfectly united in the opinion that they require some relief in regard to limited companies. They believed that it was unjust that seven men should be allowed to do what the individual cannot do. Mr. Beggs was, of course, aware that the Pharmaceutical Society of Great Britain has drafted a Bill which was lying with the Privy Council, and Mr. Beggs knew that they are in full accord with him in being anxious to prevent or to get over the present great anomaly of the law, and he (the speaker) was certain that the British Society would have the assistance of the Irish Society. Of course the two Societies might be agreed on certain questions, but it was a little difficult for them always to see eye to eye, because the Irish Act was somewhat different from the British Act, and while the British Society was quite willing to support their Irish brethren, they asked them in return to support the endeavour that was being made to get further protection. He coupled with the toast the name of Mr. G. D. Beggs.

Mr. G. D. Beggs, President of the Pharmaceutical Society of Ireland, thanked the President and those present for the kind manner in which the toast had been proposed and received. They in Ireland, he said, were a small body, but they had the interests of pharmacy deep at heart and had done their best, and he thought it would be admitted that the Irish Society was not an unworthy child of the British Society. Because they considered that the British Society was the parent Society, and they also considered it to be their duty to fight, and to fight manfully, for themselves. He thought there was a time coming when the two Societies could be united on minor points, although they could not go the whole way together. He did not know whether the British Society felt the great loss the Irish Society felt—viz., the great want of youth coming into the calling. There was a great want in that respect, and he could trace it to no other cause than that young men would not go to the trouble and expense of obtaining the magic letters "M. P. S." after their names, only to find that any huckster and nobody could do as he does. They in Ireland were fighting to get that state of things altered, and they meant to fight it to the death, because they did not mean to allow their titles and privileges to be taken from them. He did hope that the time is coming when parent and son would work together for the advancement of pharmacy. In regard to the visit of the Conference to Dublin, they felt that it was a privilege to Dublin to have the Conference there, and he considered it a privilege to be present that night; it was a long journey from Dublin, but he felt it an honour to be amongst the members of the Pharmaceutical Society of Great Britain at their annual dinner. With reference to the remarks of Mr. Atkins, Ireland had also given her sons as well as the Colonies, and they were prepared to give every man they had on behalf of the Empire.

The Pharmaceutical Society of Great Britain.

Dr. J. A. Voelcker, President of the Society of Public Analysts, in proposing the toast of "The Pharmaceutical Society of Great Britain," referred to his connection with the Institute of Chemistry, and likened himself to the lady in a novel entitled "The Mrs. Over the Way," and went on to speak of the debt which chemistry owed to the Pharmaceutical Society. For its objects had been the advance of pharmacy and chemistry, and it had carried out those in a most satisfactory manner. Having touched upon the work of such men as Dr. Arnold Thompson, Pereira, Dr. Tilden, Mr. Carteighe, and other pharmacists who had done much for the progress of chemistry in this Empire, he referred to the benevolent work of the Society, and went on to express the hope that the Pharmaceutical Society, the Chemical Society, the Society of Public Analysts, and other kindred bodies, would come closer together and work unitedly for the general good of chemistry and pharmacy. He coupled with the toast the name of Mr. Newsholme.

The President, in replying, thanked Dr. Voelcker for the able manner in which he had proposed the toast. Those present knew the prominent position which Dr. Voelcker occupied as President of the Society of Public Analysts, and they knew that probably he of all others was one of the best to judge what such a society as the Pharmaceutical Society of Great Britain was able to do, not only for its own people, but for the British public. Of course, it must be recognised that the Pharmaceutical Society was charged with public duties—and thereby it differed very much from the Society of Public Analysts—and while it was supposed to look after the interests of its own people, it was no mere trade union. The Society was only a trade union to the extent that it was formed to look after the interests of pharmacists, but there was nothing in its Charter to empower it to charge certain prices or to fix fees for work done by its members. The Pharmacy Act of 1868 placed upon chemists and druggists certain responsibilities, and the Pharmaceutical Society was entrusted with certain duties in regard to the sale of poisons which it was to see were properly carried out, and the Society had always tried to live up to its duties.

The President then proposed

Our Guests,

mentioning the names of Dr. Thomas Stevenson, the Master Cutler of Sheffield, Sir William Turner (President of the General Medical Council), Dr. Donald McAlister (Chairman of the Pharmacopœia Committee), Sir Dyce Duckworth, Sir Frederick Abel, Sir James Crichton Browne, Mr. T. F. Blackwell (Master of the Salters' Company), and others. He coupled with the toast the names of Mr. T. R. Ellin (Master Cutler) and Sir Dyce Duckworth.

The Master Cutler and Sir Dyce Duckworth having replied, Sir William Turner proposed

The Chairman,

who briefly responded, and the proceedings terminated.

During the evening vocal selections were given by the Georgian Singers.

LIST OF GUESTS.

Abel, Sir Frederick, Bt., F.R.S. (Director Imperial Institute)
Allchin, Dr. W. H. (President Medical Society of London)
Allen, C. B. (Vice-President)
Allen, F.
Anderson, G.
Antcliffe, H.
Arkinstall, W.
Arnold, H. R.
Arrow, J. J.
Arrowsmith. A. R.
Atkins, S. R. (Treasurer)
Attfield, Dr. J., F.R.S.
Baiss, Arnold
Baiss, W. A.
Barclay, John
Barnes, G. C.
Barron, R. E.
Beddard, J.
Beggs, G. D. (President Pharmaceutical Society of Ireland)
Bessell, J. W.
Bishop, E. K.
Blackwell, T. F. (Master of the Salters' Co.)
Bolton, A.
Bolton, H. N., sen.
Bolton, H. N., jun.
Bourdas, I., sen.
Bourdas, I., jun.
Boutall, G. S.
Bowen, J. W.
Boxall, H.
Boyes, A.
Braithwaite, J. O.
Bremridge, R. (Secretary)
British and Colonial Druggist
British Medical Journal
Brooks, W. H.
Browne, Sir J. Crichton, F.R.S. (Vice-President Royal Institution)
Buddles, W.
Butt, E. N.
Carteighe, M.
Carter, J. C.
Carter, R. W.
Castle, J. W.
Chalmers, W.
Chaney, H. J. (Standards Department, Board of Trade)

List of Guests—(*Continued*).

Chater, A. J.
Chemist and Druggist
Church, Sir W. S., Bart. (President Royal College of Physicians)
Clarke, J.
Clayton, W. F.
Collie, Professor J. Norman, F.R.S.
Cooper, A.
Cooper, A. J. B.
Cooper, J.
Cottle, Dr. Wyndham
Cowell, S. F. (Secretary Royal College of Surgeons)
Crisp, F. A.
Cross, W. Gowen
Cutler, The Master (Sheffield)
Daily News
Davies, T.
Davis, W. A.
Dixon, R. D.
Druce, G. C. (President British Pharmaceutical Conference)
Duckworth, Sir Dyce (Treasurer Royal College of Physicians)
Edden, T. L.
Ekins, A. E.
Falconer, J.
Farr, E. H.
Flux, W.
Fogerthy, —
Foster, E. D.
Francis, G. Bult
Francis, W. H.
Frankish, Dr.
Glyn-Jones, W. S.
Goldby, F.
Gray, John
Greenish, Prof. H. G.
Gregory, A. C.
Grimwade, Hon. F. S., M.L.C. (Melbourne)
Gulliver, W. F.
Harrington, J. F.
Harrison, John
Harvey, R. M.
Hatch, W.
Head, G. G.
Heddy, Dr.
Heighington,
Hillen, J.
Hills, Dr. R.
Hills, Walter
Hodgkinson, C.
Hodgson, C. R. (Sec. College of Preceptors)
Holmes, C. J.
Holmes, E. M. (Curator)
Howe, F. G.
Howie, W. L.
Howse, H. G. (President Royal College of Surgeons)
Hugill, E. A.
Hugill, J. H.
Humphrey, John
Idris, T. H. W.
Jackson, C.
Jones, G. E.
Jones, R. H.
Knight, G. J.
Lancet (S. A. Vasey, F.I.C.)
Lansdown, G. A.
Lawrence, W. F., M.P.
Lescher, F. H.
Lewis, D. L.
Lewis' Friend
Linstead, E. F.
Lloyd, J.
Lucas, E. W.
McAlister, Dr. Donald (Chairman Pharmacopœia Committee, General Medical Council)
McGlashan, J.
Mager, W. K. (Queenstown, S. Africa)
Marsh, Howard, F.R.C.S. (President Clinical Society)
Martin, C.
Massey, S. J.
Matthews, H. E.
Matthews, J.
Maw, A. T.
Maw, C. T.
Mercer, C. A.
Mizzi, L.
Moon, H.
Morgan, J.
Morson, A.
Morson, T. D.
Morson, T. P.
Moul, F.
Naylor, W. A. H.
Nelson, W. B.
Newsholme, G. T. W. (President)
Padman, J., M.R.C.S.
Pain, R.
Parker, W. S.
Parsons, W.
Pascall, W.
Patterson, J.
Paul, Dr. B. H.
Paul's, Dr., Friends
Peck, J. W. (President Chemists' Assistants' Association)
Perry, W. A.
Pharmaceutical Journal
Phillips, A. J.
Philp, W. J. I.
Preece, Sir W. H., K.C.B. (Chairman Society of Arts)
Preston, Major A. C., V.D.
Ransom, F.
Raper, J. R.
Ridgwell, J. B.
Ridley, R.
Robbins, J.
Roberts, Samuel, M.P.
Robinson, R. A., L.C.C.
Robinson, W. P.
Roe, G.
Rogers, F. A.
Rogerson, W. J.
Royle, H. W.
Royle, J.
Rundle, C.
Savory, A. L.
Schacht, Dr. F.
Shannon, R. J.
Sherwood, N.
Shillcock, A.
Simpson, Alderman
Smith, F. Upsher
Smith, J. H.
Smith, P. J.
Society of Apothecaries, The Master
Solomon, A. H.
Standard
Stephenson, T. (Bombay)
Stevenson, Dr. T.
Stevenson, H. E.
Stokes, H.
Street, A.
Street, E.
Taylor, G. S.
Thomson, Professor J. M., F.R.S. (President Institute of Chemistry)
Thurston, J.
Tilden, Professor W. A., F.R.S.
Times
Tocher, J. F.
Tomkins, W.
Truman, F. W.
Turner, Sir Wm., K.C.B. (President General Medical Council)
Tyrer, Thomas
Umney, C.
Umney, E. A.
Umney, J. C.
Voelcker, Dr. J. A. (President Society of Public Analysts)
Walker, H.
Walker, H. J. D.
Want, W. P.
Warren, F. W.
Warren, W.
Weld, C. C.
Whiffen, Thos.
White, G.
Wiggins, H.
Wigginton, A.
Will, W. Watson
Williams, T. R.
Wilson, J.
Wink, J. A.
Wink, Jan. G. S.
Woolley, S. W.
Woosnam, W. W.
Wretts, J. R.
Wright, A.
Wright, H. C.

PRACTICAL NOTES AND FORMULÆ.

Dressing to Prevent Eschars.

Gutta percha, 4; chloroform, 30; balsam of Peru, 1. Paint on the surface of the wound twice daily with a fine camel's-hair pencil.—*Bull. Gen. de Therap.*, **143**, 72.

Creosote Pills.

Legendre prepares pills of creosote as follows: Creosote, 1 Gm., is rubbed down with lime (from marble), 30 Cgm., and one drop of water. The pasty mass is then mixed with almond oil soap, 40 Cgm., and sufficient inert powder to give the requisite consistence. The mass is then divided into twenty pills, each containing 5 Cgm. of creosote. These harden somewhat in the course of a few days, but readily disintegrate in water. If a permanently soft mass be required, this may be obtained by lessening the amount of lime and increasing the soap, thus:—Creosote, 1 Gm.; lime (from marble), 20 Cgm.; water, 1 drop; almond oil soap, 50 Cgm.; inert powder, *q. s.* to mass. Divide into twenty pills and silver. These pills will be slightly larger than those of the first formula.—*Répertoire*, **14**, 102.

Stain for Leucocytes.

R. C. Rosenberger employs the following phloxine stain for leucocytes:—Saturated aqueous solution of methylene blue, 5; saturated aqueous solution of phloxine, 2; alcohol, 95 per cent., 3; distilled water, 6. The blood is fixed either by heat, or with alcohol, or a mixture of ether and alcohol, stained in the above for four minutes, washed, dried, and mounted on balsam.—*L'Union Pharm.*, **43**, 57.

LETTERS TO THE EDITOR.

Division of the Minor Examination.

Much is again being written about the division of the Minor Examination and the necessity for a curriculum, in order satisfactorily to prepare for it, and so much commiseration expressed for the failures that one would imagine the sole object of the examiners was to pass men into an already greatly overstocked calling. The object and scope of the qualifying examination is well put in the "Annotations" in this week's Journal; and in the same issue the article by "An English Student" on the training of a German pharmacist shows up well in contrast. If one looks through the syllabus for the Minor and bears in mind that thirty years have passed since the Pharmacy Act became law, one fails to see wherein should be the difficulty to anyone who ought to have entered the trade during the last twenty years. To complain that the number of subjects are too many for the adult student to hold an elementary grasp of them all at one time seems childish when well-educated boys of from sixteen to eighteen years of age pass the, to them, much more comprehensive London Matriculation. The large number of failures is a fairly good proof that the entries are from a wrong class of boys. Whilst the theoretical ideal of a pharmacist remains what it was in the eyes of the founders of the Pharmaceutical Society, and still is in the estimation of our best men, there can be no possible lowering of the standard or making easier the steps by which the qualification may be obtained; at all events, so long as there is any reasonable hope that that ideal will ever be approached by the rank and file. I say reasonable hope of ever approaching the ideal advisedly. This raises the question, Is there such a hope? It brings to the front the other side of the subject. I write as one who entered the trade before the Pharmacy Act was law, at a time when, through the work of the Pharmaceutical Society as a voluntary body, the public were beginning to understand the meaning of and to appreciate the distinction "pharmaceutical chemist." My Major certificate bears the date 1870, with eight honoured names in faded ink—shades of the past. How great would be their disappointment, were they with us to-day, to discover that the public idea of a pharmacist was merely the legalised seller of poisons in a drug store, or possibly the qualified manager in it, and to find, moreover, that so many of the chemists had no higher ambition.

What is the state of pharmacy to-day and whither is it tending? What is the inner feeling and the spirit of most of the men engaged in it towards the subjects of the examination they have passed and towards the general advancement of the calling they have chosen. The doors of the Society have been opened again and again. The outsiders have not only been invited—they have been besought to come in—everything has been done to entice them in, but they won't come and they never will. As before the examination, so after—they care for none of these things. Perhaps there is some excuse, for they find in the first place that three-fourths of the dispensing of medicines for the sick is in the hands of medical practitioners who, as far as can be judged, are more reluctant than ever to give it up. They find that it is only in the large towns and fashionable health resorts that there is much scope for dispensing chemists; but that practically on every hand what they understood as the business of a chemist and druggist is being carried on by others, unqualified, and that the title itself is a mere chimera—a delusion and a snare—being freely used by others without let or hindrance; they see that long before the Pharmaceutical Society will set its foot down on this matter and thrash it out, as in the case of legalisation of limited companies, time and custom will have made vested interests unassailable.

It is no great wonder, then, that at least a thousand qualified men have sold their birthright, for temporary advantage, to unqualified employers; and that half of the remainder, some by necessity, others of their own free will and choice, ignoring what should be and facing what is, have shook themselves free from all pretence and ambition of being anything but a storekeeper, carry on a general business on purely commercial principles and run the insignificant purer part of pharmacy as a side-line. "Cash Drug Store" and a patent medicine stamp, with an elastic conscience, is the successful order of the day. Write "Chemist and Druggist" over the shop front, and the public will read "High Prices." Put "Pharmaceutical Chemist," and they will translate it "Very High Prices" and pass by, leaving the pharmacist in an atmosphere of serenity and leisure sufficient for Mr. Hyslop. No wonder, then, that men are asking, not "Shall the Minor be divided?" but "Shall it not be abolished?" Has not the *raison d'être* of the Pharmaceutical Society ceased, and should not the frontage of its buildings have inscribed thereon "Ichabod"?

Upper Tooting, May 26, 1902. Jno. Ingham.

The easy way in which you affect to dispose of my arguments is amusing. Their cogency may be safely left to commend itself to practical men who care to examine the facts. Allow me to notice your query, "Would 'Curriculum' expect a student to learn all he ought to know of the technical applications of those sciences during the year or two years which must elapse before the candidate would be allowed to proceed to his final examination?" My answer is most certainly I would. The evil we are considering is the fact that at present a large proportion of candidates attempt to learn all they ought to know about both these sciences and their technical applications in the ridiculously inadequate period of three months. One would like to hear what you really think the curriculum is to be that you would impose. What do we find indicated in the Examination Syllabus, page 5, as suitable training for the Minor Examination by the Council of the Pharmaceutical Society? "The Council of the Pharmaceutical Society recommends that all candidates, before presenting themselves for examination, should receive a systematic course of instruction occupying a period of not less than six months; and that such period of study should include *at least* sixty lectures in chemistry, and eighteen hours' work in each week in practical chemistry, forty-five lectures and demonstrations in botany, and twenty-five lectures and demonstrations in materia medica. This may be held as indicating the curriculum which the Council would impose on all candidates if it possessed the power. It does not err on the side of excessive stringency, but may be taken as the absolute minimum. How does the case stand when we turn to the official curriculum in the school maintained by the Society as furnishing a model of what a pharmaceutical education should be? At page 108 of the Calendar we read: "In the period of sixty years the school has been developed by the Council of the Pharmaceutical Society into an institution which affords a complete scientific curriculum for the pharmaceutical student." Let it be noted that this curriculum includes, not only the sciences, but also their practical application in the technical subjects of the examination. Speaking of dispensing, for example, it is said, on page 119, that "all operations that can be performed at the dispensing counter . . . . are practised by the student, who will thus be afforded an opportunity of acquiring a sound knowledge of this branch of his business." The curriculum during which all this is to be accomplished begins in October and ends in June, and the Council adds: "A student who works diligently during the Elementary Course is expected to be ready to pass the Minor Examination in July." Are we not justified in saying that the official view is that six months might be accepted as the irreducible minimum, but that nine months is nearer the ideal? My suggestion to take the science subjects alone and the technical subjects one or two years later is a great advance on such an ideal, and, I believe, has the support of the most experienced examiners and educationalists. Permit me to repeat my two points again:—(1) A compulsory curriculum is necessary, and should be earnestly pressed for till it is secured. (2) Immediate division of the Minor Examination is an urgent reform in the interests of all parties. It would at once secure greater efficiency in the examination and better education, and would facilitate the introduction of a definite curriculum. It only remains to add that, while the early realisation of the former object is a matter of doubt, the latter is immediately attainable, and would in itself be so great an improvement that there is every inducement to institute it without further delay.

May 26, 1902. "Curriculum" (136/34).

Solubility of Turpentine in Glacial Acetic Acid.

I acknowledge my indebtedness to Mr. Squire for his answer to my query. His reply is as I expected it would be, and the fact that it differs from his previous statement shows the necessity for having "authority" as to the correct application of ambiguous wording so as to prevent falling into an error by coming to a wrong conclusion. Mr. Squire gives me credit for claiming "to have demonstrated that B.P. glacial acetic acid mixed with an equal quantity of oil of turpentine will not remain so mixed for three days *at 15° C.*" I made no such claim. It was obvious that what I said referred to the test as given in the B.P. (it is it that is being discussed), and not to solubility at a fixed temperature. Of all the acids I have examined that have responded to the test at the time of mixing, separation has occurred in from one hour to forty-eight hours. My observations have extended over a period of two and a half years, consequently my conclusion has not been hastily arrived at. Without questioning the findings of others, I have no hesitation in condemning the test, when I find the same acid at one time dissolving (volume for volume) at 15·5° C. and at another time separating at 17° C., when mixed in the same proportions; or another acid at one time separating under 22° C. and at a subsequent time dissolving at 19° C. Mr. Duncan's experience is equally against the test. In his paper he said: "I have tested eight samples . . . . . and only two answered the test." Others have had similar unsatisfactory results. I fail to see that Mr. McDiarmid's "comment," referred to by Mr. Squire, "confirms the statement" (the correctness of which I have not questioned) "given in the 'Companion'" inasmuch as the temperatures given by Mr. McDiarmid range from 15° C. down to 10° C. (59° to 50° F.), whereas the 'Companion' (p. 594) temperatures range from 58° to 62° F. If his "comment" confirms anything it may confirm that, at *low temperatures*, the B.P. test holds good. I agree with Mr. McDiarmid that "there is need for further experiment." What we want is an infallible test. Meantime the test is worthless.

Glasgow, May 26, 1902. THOMAS DUNLOP.

Œnanthe Crocata.

I read with interest Mr. Holmes's article in the *P.J.* on *Œnanthe crocata*. The plant is very common in the Weald of Kent, and in some of the roadside ditches it grows in luxuriance to the height of four or five feet. I have always considered it to be one of the most poisonous native plants, and have frequently warned people of its poisonous qualities; indeed, it is surprising there are not more cases of poisoning by it. Farmers sometimes find cattle dead from some unknown cause, probably in some cases from eating this plant. I am rather surprised the active principle does not appear to be an alkaloid, anyone would suppose it would be allied to conine. Dr. Withering, in his 'British Plants,' says it is called the "Five-fingered root" in Pembrokeshire, and is used in cataplasms for the worst kinds of whitlow. Dr. Pulteney observes in all the cases of poisoning by this plant which came under his notice the sufferers were affected with locked jaw. Two other species of the genus *Œnanthe* grow in this district, *O. phellandrium* (five-leaved water dropwort) and *O. fistulosa*, the former is probably the more poisonous of the two. Perhaps on investigation these plants might prove valuable therapeutic agents.

Cranbrook, May 27, 1902. A. W. HUDSON.

The British Botanic Garden.

It was with some surprise and regret that I read Mr. Philip Cochrane's letter in the *Pharmaceutical Journal* of May 24, in which he refers to the lack of support accorded to the British Botanic Garden at Perry Hill; surprise, because I was distinctly informed some time ago—I believe it was in February of this year—by Mr. Cochrane that the desired hundred subscribers had been already obtained, and indeed it was on that condition that I consented to continue my subscription; regret, because I failed to investigate before again subscribing, and also because the garden does not receive that support which is so much needed—support which I was assured was forthcoming. But I venture to say that the reason for such a state of affairs is not difficult to discover, and I would suggest that the secession of former subscribers is mainly due to the fact that no account of income and expenditure, no list of subscribers, and no report of any kind has ever been submitted for their consideration. This, to say the least, is very unsatisfactory. It may pass with the enthusiast, yet I fear that the majority cannot be so termed, hence they unfortunately require a little light letting in upon the working of the venture. It is almost needless to state that this is written more with a view to suggesting that the garden be re-established upon a better basis than with any intention of disparaging the undertaking.

Lewisham, May 26, 1902. GRAHAM BOTT.

Gutta-Percha Yielding Plant.

In a paragraph at p. 445 of the last issue of the *Pharmaceutical Journal* it is stated that the Acting-Consul at Zanzibar has made the discovery that an elastic product resembling gutta-percha is contained in the fruit of a native plant. May I say that, judging from the description of the fruit, as well as from the manner in which the milky juice flows on the fruit being cut, there seems to be nothing new in this discovery. The fruit is evidently that of a species of *Tabernæmontana* belonging to the natural order Apocyneæ, the coagulated milk from several species of which has been known for a considerable time to form an elastic, or rather plastic, substance when fresh, but upon drying it becomes brittle and friable, and finally breaks up into fine powder. So long ago as the Great Exhibition in 1862 the coagulated milk of *Tabernæmontana utilis* was shown as a probable substitute for gutta-percha. A portion of this sample is contained in the Kew Museum, together with others of more recent dates and from different species and countries, but all go to prove the worthlessness of the *Tabernæmontana* juices either as substitutes for or for mixing with gutta-percha.

Lympstone, Devon, May 26, 1902. JOHN R. JACKSON.

The Uses of Sempervivum Tectorum.

Referring to Mr. R. Goodwin Mumbray's communication on *Sempervivum tectorum*, I can confirm what he says about the general cultivation of the plant on the tile roofs of country cottages. Fifty years ago it was not only common in the villages of South-East Kent, but even nearer the towns and many outbuildings around the city of Canterbury had its crop of houseleek on its roof. In those days I remember that it was not only used in the preparation of an ointment referred to by Mr. Mumbray as cingreen ointment and used "as a remedy for scalds, burns, and broken chilblains," but the country people had a strong belief in its power for curing ringworm, for which a preparation was made as follows by most good housewives. A few leaves were soaked in vinegar for some time and a copper penny of the period (before the introduction of the bronze coinage) was also placed in the vinegar till it became quite green with verdigris, when it was removed and the fluid dabbed on the place with a piece of rag. The common name in Kent at the time I write of was sengreen, usually spelt in this manner. The following provincial names have also been given to it:—Ayegreen, Jupiter's eye, bullock's eye, and Jupiter's beard.

The following extracts from Barton and Castle's 'British Flora Medica,' on the uses of the houseleek, may be of interest to Mr. Mumbray, and perhaps to some other readers of the *Pharmaceutical Journal*:—"It has no very perceptible odour, to the taste it is watery, cooling, and slightly acid and styptic. The succulent leaves contain a large quantity of acidulous, rather opaque juice, which, besides producing a sensation of astriction in the mouth, manifests its astringency by the dark colour it assumes when mixed with a solution of sulphate of iron. Though it is now but indifferently valued as an internal remedy against diseases, it was formerly considered a very serviceable refrigerant and astringent, good results having been ascribed to its use in dysentery and convulsive diseases. Peasants, also, led no doubt by the natural credulity which prevails respecting herbs among that class of society, sometimes take it for the cure of intermittent fevers, and are said to derive either imaginary or positive relief. Externally applied, the houseleek has enjoyed no mean reputation. Galen celebrates it as an application in erysipelas, shingles, and other inflammations, Dioscorides in ophthalmia and against worms, and Pliny for weakness of the eyes. The bruised plant is frequently employed in rustic practice against bruises, burns, and long-standing ulcers. In some countries houseleek is regarded with a kind of religious veneration, the simple and credulous inhabitants attributing to it the power of defending them from enchantments and the malevolence of intended sorcerers. Linnæus informs us that in Smoland houseleek is planted on the roofs of houses to preserve them from decay."

The initial letter *S.*, standing alike for *Sedum* and *Sempervivum*, would appear to imply that *Sempervivum tectorum* and *Sedum acre* were confused by Mr. Mumbray as belonging to one genus. That this is not so will be understood when it is pointed out that *Sedum acre*—the stone crop—is a British plant, while *Sempervivum tectorum*, though common enough in many places, is not an indigenous plant.

Lympstone, Devon, May 26, 1902. John R. Jackson.

The Sedum Family.

Mr. Mumbray's interesting note under the above heading in last week's *Pharm. Journ.*, and his challenge to "lovers of plant-lore to investigate the subject" has induced one such to search his bookshelves for what light they are able to throw upon these curious members of the natural order Crassulaceæ.

Holland's 'Pliny' yields the following information:—"Of sengreene or houseleeke there be two kinds, which the Greeks call *Aizoon*, because they be alwaies fresh and greene, and some give it the Latine name, *Sempervivum*. The greater sengreene is ordinarily planted in earthen pans or vessels set out before the windows of houses, which some name *Zoophthalmon* (eye of life) and others *Stergethron* (love philtre), because it is thought so good in amorous medicines. Here in Italy they call it *Sedum* the greater. The second kind is somewhat lesse (which some take to be Prick Madame of the French Trique Madame). The lesse sengreene or jubarb (Jupiter's beard) groweth upon walls and specially such as be ruinat and broken down, likewise upon the tiles of houseroofs." Besides the aphrodisiac virtues of the houseleek alluded to above, the only other use the Romans appear to have made of the plant was that of preserving "corn and all seed whatsoever," including "beets and other pot hearbes," from disease and from the attacks of "pismires, cankerworm, gnats, and all hurtfull creatures whatsoever"—the *modus operandi* being to "temper and soke the seed in the juice of the hearbe."

Turning to Gerard's 'Herbal,' one finds a more extended range of properties claimed for the *Sedums*. "The great sengreenes are good against Saint Anthonie's fire, the shingles, and other creeping ulcers and inflammations that proceed of rheumes and fluxes. They take away the fire in burnings and scaldings, and being applied with barley meale dried, do take away the paine of the gout. The juice thereof taketh away corns from the toes and feet, if they be washed and bathed therewith and every day and night as it were implaistered with the skin of the same houseleek, which certainly taketh them away without incision or such like, as hath been experimented by my very good friend Mr. Nicholas Belson, a man painefull and curious in searching for the secrets of Nature." Again, "The juice of housleeke, garden nightshade, and the buds of poplar boiled in *Axungia porci* or hog's grease, maketh the most singular populeon that ever was used in chirurgerie." Of the stonecrop or wall pepper (*Sedum acre*) Gerard says, "This little hearbe is sharpe and biting and very hot. Being outwardly applied it raiseth blisters and at length exulcerateth. It taketh away hard kernels and the King's Evill if it be laid unto them."

Gray's 'Supplement' (1821) describes the properties of the great houseleek (*Sedum majus* or *Sempervivum tectorum*) as follows:—"Very cooling, astringent, used externally to corns," and of the *Sedum acre*, thus, "Emetic, cathartic, detersive in cancers and scrofula, antiscorbutic and rubefaciant."

Dr. Nevin's 'Appendix to the London Pharmacopœia' (1854) has the following:—"The houseleek is introduced in this work on account of its value in the treatment of the eczema and porrigo of infants. When the entire leaves are bruised and mixed with cream and sulphur they form a most soothing and valuable application."

The 'U.S. Dispensatory' (1891) says:—"*Sedum acre* is recommended by Dr. P. O. Wagener for dissolving the false membrane in diphtheritic sore throat. He applies to the throat, with a camel-hair pencil, a mixture of fluid extract of aconite, lactic acid, oil of turpentine and fluid extract of stonecrop, to produce emesis, when the membrane is generally expelled."

Chamber's 'Encyclopædia' (1899) informs one that in Scotland the houseleek is known as Fous or Fouets. "The leaves cut or bruised and applied to burns afford immediate relief, as they do also to stings by bees or wasps. An edict of Charlemagne contributed greatly to the extensive distribution of the plant:—*Et habeat quisque supra domum suam Jovis barbam* (and let everyone have Jupiter's beard on the top of his house)."

Dr. Fernie, in his 'Herbal Simples' (1897) furnishes a number of interesting details. He says the plant was dedicated of old to Thor or Jupiter. It bore the titles of Jupiter's eye and Jupiter's beard (Joubarbe, in French). The origin of the latter name being the supposed resemblance of the plant's massive inflorescence to the sculptured beard of Jove. In the country, and especially in Scotland, it is highly esteemed and regarded as a protection against thunder and lightning, as well as against the influence of witches and sorcerers. (Hence known as "thunderbeard," from Jupiter, the thunderer.) Dr. Fernie says the Dutch cultivate the leaves with a dietetic purpose for mixing in their salads. He states that they contain (the leaves, not the Dutch!) "an acidulous, astringent and mucilaginous juice which affords malic acid, and in doses of one to three drachms has proved useful in dysentery and in some convulsive diseases." "*Sedum acre* serves admirably to make a gargle for scurvy of the gums and a lotion for scrophulous or syphilitic ulcers," and, finally, "The famous empirical 'anticanceroso' nostrum of Count Mattei is authoritatively said to consist of *Sedum acre*, *Sempervivum tectorum*, *Sedum telephium*, *Matricaria*, and *Nasturtium sisymbrium*."

By the way, the learned Doctor is somewhat mixed in his derivations. On page 274 one reads: "The word *Sedum* comes from the Latin *sedare*, to soothe," while on page 277 one is told that "From their close growth originally on their native rocks, the houseleeks have acquired the generic title of *Sedum*, from *sedere*, to sit."

Brighton, May 27, 1902. C. S. Ashton.

Degenerating.

What is pharmacy coming to? We are getting gradually inured to mixing up a little dispensing with a smattering of picture framing and an assortment of groceries, etc., but when we arrive at the stage of a "Chemist Cheap Jack" it is about time to throw up the sponge. I was spending a few days last week at Blackpool, and taking a stroll down the promenade one morning I came across a crowd of people in front of a shop displaying the sign "Butterworth, Auctioneer and Chemist." Interest in the craft drew me towards the assembled multitude. The first thing that I noticed was a youth waving large sticks of liquorice juice about, and accompanying the movement with: "Now, who says another one. A penny each." Of course, there were several who did say another one, and a very quick sale was transacted. Then we discovered that this was a means of drawing the crowd, for a gentleman stepped into the rostrum and introduced himself as a qualified chemist and auctioneer. I really forget how many shops he said he had been in, but it was well into the thirties, and as his age did not appear to be in the centuries it made me reflect as to how long he remained in each establishment—possibly only five minutes in some. However, that is by the way. He told us that he qualified in 1882, and had two retail shops at the present time, but standing behind a counter did not suit his health. We should imagine that it did not. We were then introduced to several large bottles containing cough mixture, blood mixture, liver ditto, etc., etc., all of which he told us we should have to pay fabulous prices for in any shop in the town. "Go inter any chemist's in Blackpool, and ask for a shillin' bottle of cough mixture, an' I'll bet thee a shillin' tha' gets a three ounce bottle. What do I give 'ee. Look at it." We looked and saw something that reminded one of a Winchester quart. We were then invited to taste it, and a wine glass was passed round. Needless to say, there was a general epidemic of coughs of a most serious character in the audience, which immediately ceased on consuming the potion. I did not taste the mixture, but it looked villainous enough. The auctioneer chemist then described a book of recipes which contained everything from making dubbing to a cure for consumption, and he sold quite a number at a shilling each. After listening to an oration about the liver and other organs of the body, put in most choice language, we went away wondering how he managed to get into the ranks of the craft at all. In fact, his grammar was such that it was marvellous how he got over the preliminary stage. I should like to hear if anyone has seen or heard of a more degrading position for a qualified man. I have not.

May 24, 1902. "A Member" (136/16).

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply.

Jury Service (E. H.—74/3).—No, it is necessary to be registered as a pharmaceutical chemist in order to secure exemption.

Quain's 'Dictionary of Medicine' (C. B. B.—74/4).—Refer to the review of the work, in the *P.J.* of January 18 last, page 48.

Formaldehyde for Preserving Plants (E. J. K.—74/2).—the paper to which you refer appeared in the *P.J.* of November 24, 1900, page 581.

Isle of Man (J. P.—74/16).—(1) You would not be able to secure registration in the island without being properly qualified. (2) We cannot undertake to advise you how to evade the Pharmacy Act.

Oxide of Iron (W. W.—74/15).—Your best plan would apparently be to advertise in the columns of suitable trade papers. Write to the editor of the *Universal Provider*, 68, Farringdon Street, London, E.C.

Dispensing Queries (C. P.—74/8).—(1) The British Pharmacopœia formula for belladonna suppositories specifies the alcoholic extract. (2) In the case of belladonna ointment the same authority specifies the liquid extract. (3) No.

Botanical (A. H. B.—74/6).—Your specimen should have been addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope or post-card for reply. It has been handed to him.

Black Boot Cream (C. J. E.—24/9).—Beeswax, 3½ oz.; soft soap, 1 oz.; turpentine, 10 fl. oz.; boiling water, 10 oz.; pearlashes, 1 drachm; lampblack, 2 oz.; nigrosin, ½ oz. Melt the wax in the turpentine, dissolve the soap in the water and add the pearlashes. Mix in the other ingredients, and continue the trituration until the mixture is cold.

Aromatic Castor Oil (C. J. E.—74/9).—Peppermint oil, 2 drops; oil of wintergreen, 1 drop; saccharin, 1 grain; alcohol, 90 per cent., 1 drachm. Dissolve and add to castor oil, 7 drachms. Of course, you may substitute other flavours, such as that of bitter orange oil or cinnamon oil, for the above, if peppermint be objected to.

Brown Hair Dye (R. and Co.—70/30).—(1) Extract of logwood, 3 ozs.; boiling water, 20 fl. oz. Dissolve; then add bay rum, 8 fl. ozs.; lavender oil, 1 fl. drachm; glycerin, 4 fl. ozs. (2) Pyrogallic acid, 1 drachm; copper chloride, 2 drachms; nitric acid, 5 drops; distilled water, 6 fl. ozs. (3) Pyrogallic acid, 8 ozs.; rectified spirit, 16 fl. ozs.; dissolve. Sodium sulphide, 1 oz.; water, 60 fl. ozs.; dissolve. Mix the two solutions.

Freezing Mixture (C. J. E.—74/11).—A mixture of equal parts of washing soda, freshly crushed, and ammonium nitrate gives one of the best freezing mixtures. The two salts should be roughly mixed together, then packed round the vessel containing the substance to be frozen, and a little, not too much, water poured on the mixture. As washing soda is procurable everywhere, your client would only have to stock ammonium nitrate. Of course, you do not need the pure salt for this purpose. It is, however, not so cheap as ice and salt.

Blue Show Colour (G. B.—74/7).—The cause of the precipitate which has given you trouble with the ammonio-sulphate of copper show colour is probably the use of tap water containing lime salts in solution. If you use distilled water for dilution you will probably find that this difficulty will not occur. The ammonio-sulphate of copper solution is one of the best and most permanent of all the blues. Another good colour is made by dissolving indigo sulphate in sulphuric acid and water; also by dissolving ferroso-ferric cyanide in oxalic acid and diluting. In all cases distilled water should be used. Any of the water soluble aniline blues give fine colours, but they are not so permanent as the inorganic salts. Another copper formula which gives good results is: Copper sulphate, 160 grains; liquor potassæ, 16 fl. oz.; glycerin, 4 fl. oz.; distilled water, 1½ gallons. Dissolve the copper, add the glycerin, and then the liquor potassæ; let stand for a few hours, then filter and dilute.

Marking Inks (T. E. B.—74/5).—(1) Silver nitrate, 1 troy oz.; sodium carbonate, 1½ troy oz.; tartaric acid, 60 grains; strong solution of ammonia, 6 fl. oz.; powdered sugar, 6 drachms; powdered gum acacia, 1¼ troy ounces; distilled water, *q.s.* Dissolve the silver nitrate and sodium carbonate separately, mix the solutions, collect the precipitate, and wash it until free from nitrate, with distilled water. Rub the moist precipitate with the tartaric acid in a mortar until effervescence ceases. Then dissolve the precipitate, with the sugar and gum, in the solution of ammonia; finally add enough water to make the volume up to 8 fl. oz. (2) Aniline oil, 50 parts; water, 25; hydrochloric acid, 25 fluid parts. Heat together on the water-bath until dissolved. Then add copper chloride, 10, and boil. When the liquid becomes violet add hydrochloric acid, 15 fluid parts, and powdered potassium bichromate, 10 parts, alternately, in small portions at a time; if effervescence becomes very violent, remove from the source of heat. Finally add 10 to 15 fluid parts of hydrochloric acid to dissolve any separated colouring matter, and filter.

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LONDON: SATURDAY, MAY 31, 1902.

DEATHS BY POISON IN 1900.

The sixty-third annual report of the Registrar-General deals with the births, deaths, and marriages registered in England and Wales during the year 1900. The deaths registered numbered 587,830, as against 581,799 in 1899, being in the proportion of 18·2 per 1,000 of the population, against an average of 18·3 per 1,000 in the ten years immediately preceding. But the total number of deaths by poison showed an increase, being 1,193, as against 1,159 during 1899, or a net increase of 34. The deaths by poison are roughly classified in the following table:—

Cause of Death.	Males.	Females.	Total.
Accident and Negligence	472	266	738
Suicide	276	178	454
Murder	—	1	1
Deaths by Poisoning	**748**	**445**	**1,193**

The accidental poisoning cases in 1899 numbered 636, the suicides 521, and there were also two cases of murder by poison. Whilst, therefore, the accidental cases show a large increase, suicide by poison appears to have fallen somewhat into disfavour in 1900. It must again be pointed out that the term poison, as employed by the Registrar-General, is a very elastic one, and it is to be regretted that his classification of substances under that name is still extremely unsatisfactory, as will be seen on referring to the tabular statement of substances, other than registered poisons, which are credited with causing death. The 738 deaths due to accident and negligence in 1900, as against 636 in 1899, were mainly caused by substances which are not scheduled as poisons, only 160 appearing to have been caused by scheduled poisons, a list of which is given in the following table:—

Poison.	Males.	Females.	Total.
Aconite	2	—	2
Arsenic	1	10	11
Belladonna	4	4	8
Cantharides	—	1	1
Chloral Hydrate	6	2	8
Chlorodyne	2	4	6
Chloroform	2	2	4
Cocaine	1	2	3
Ergot of Rye	1	—	1
Mercuric Chloride	—	1	1
Opium and other Narcotics	56	32	88
Oxalic Acid	4	3	7
Potassium Cyanide	4	—	4
Prussic Acid and Oil of Bitter Almonds	4	1	5
Strychnine and Nux Vomica	7	3	10
Weed Killer	1	—	1
Accidental Deaths	**95**	**65**	**160**

Carbolic acid, which was not included in the schedule of poisons until September, 1900, was responsible during that year for 35 accidental deaths—20 males and 15 females—a considerable reduction on the figures for 1899, when there were 45 accidental deaths due to carbolic acid—24 males and 21 females. Mineral acids were accountable for 24 cases—17 males and 7 females, accidental lead poisoning caused the death of 115 persons—106 males and 9 females, while anæsthetics used for operations caused death in 116 cases—81 males and 35 females. Though carbolic acid is now transferred to the table of scheduled poisons, it must be regarded as an unscheduled poison for the year 1900, and it is therefore included in the following table of substances which caused death, but are not included in the list of scheduled poisons:—

Poison.	Males.	Females.	Total.
Alcohol	9	5	14
Ammonia	9	9	18
Anæsthetics	81	35	116
Arsenical Beer	6	39	45
Brass	1	—	1
Barium Chloride	1	—	1
Calcium Silico-Fluoride	1	—	1
Camphor	2	—	2
Camphorated Oil	1	—	1
Carbolic Acid	20	15	35
Castor Oil Seeds	1	—	1
Caustic Soda	2	1	3
Coconut	—	1	1
Copper Sulphate	—	1	1
Fumes and Gases (Various)	58	15	73
Fungus	—	1	1
Lead	106	9	115
Liniment	1	1	2
Marking Ink	—	1	1
Medicine (Overdose)	—	1	1
Mercury	1	1	2
Mineral Acids	17	7	24
Paraffin	3	1	4
Paraldehyde	—	1	1
Phosphorus	1	4	5
Potassium Bichromate	—	1	1
Ptomaines, Unripe Fruit, etc.	31	40	71
Saffron	—	1	1
Silver Nitrate	1	—	
Yew and Other Leaves	1	1	2
Zinc Chloride	—	1	1
Kind not stated	23	9	32
Accidental Deaths	**377**	**201**	**578**

It will be seen that many of the substances classed as poisons in the foregoing list are not such as are usually regarded as being of a poisonous nature, and commonsense seems to call for a separate list of deaths caused by irritant substances which are not necessarily poisons. So far as suicidal cases are concerned, we find that scheduled poisons are again in the minority, 202 deaths being caused by scheduled poisons, as against 252 by other toxic substances. The former are classified in the following list:—

Poison.	Males.	Females.	Tota
Arsenic	3	2	5
Belladonna	—	2	2
Chloroform	1	—	1
Mercuric Chloride	2	1	3
Narcotics	52	20	72
Oxalic Acid	24	23	47
Potassium Cyanide	15	1	16
Prussic Acid and Oil of Bitter Almonds	34	2	36
Strychnine and Nux Vomica	6	11	17
Vermin Killer	—	3	3
Suicides	**137**	**65**	**202**

Carbolic acid was used in 134 suicidal cases—76 males and 58 females, whereas in 1899 there were 167 suicides with carbolic acid—75 males and 92 females. Mineral and other acids were used in 51 cases—26 males and 25 females. The following statement shows the whole of the suicides by non-scheduled poisons and poisonous vapours:—

Poison.	Males.	Females.	Total.
Alcohol	1	—	1
Ammonia	1	6	7
Benzoline	—	1	1
Camphor Liniment	1	—	1
Carbolic Acid	76	58	134
Creosote	1	–	1
Fumes and Gases (various)	4	1	5
Liniment	—	2	2
Mercury	—	1	1
Mineral and other Acids	26	25	51
Paraffin	—	1	1
Phosphorus	2	6	[illegible]
Potassium Bichromate	1	—	1
Zinc Sulphate	—	1	1
Kind not stated	26	11	37
Suicides	**139**	**113**	**252**

It seems clear that the inclusion of a poison in the schedule continues to prevent cases of accidental poisoning to a very large extent, and that the tendency to suicide is also checked in some degree. Thus, scheduled poisons were the fatal agents in less than 22 per cent. of the accidental deaths during 1900, and in less than 45 per cent. of the total accidental cases and suicides.

Group.	Scheduled.	Un-Scheduled.	Total.
Accidents	160	578	738
Suicides	202	252	454
Murder (Strychnine)	1	—	1
Total	**363**	**830**	**1,193**

CARBOLIC ACID AS A POISON.

It is satisfactory to find, as shown by the following comparative table, in which figures are given for nine years, that the number of deaths caused by carbolic acid was less in 1900 than in 1899, or any other year since 1893. That improvement, curiously enough, began to take place before the poison was scheduled, and it may be anticipated that future reports by the Registrar-General will show still further imporvements in the same direction. The proportion of deaths by carbolic acid poisoning in 1900 was only 14·1 per cent., as against 18·3 per cent. in 1898, and 13 per cent. in 1892, thus:—

Cause of Death.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.
Carbolic acid	106	148	202	258	197	219	206	212	169
Other agents	709	819	889	920	894	980	911	947	1,024
Total Deaths	**815**	**967**	**1,091**	**1.178**	**1,091**	**1,199**	**1,117**	**1,159**	**1,193**

The number of accidental deaths caused by carbolic acid during the last year that poison remained unscheduled shows a large decrease as compared with the figures for the previous year, being the lowest on record since 1896, while so far as suicides by carbolic acid were concerned there was also a considerable falling off in 1900, the number being the lowest since 1893, thus:—

Group and Poison.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.
Accidents—									
Carbolic Acid	33	31	35	34	34	43	37	45	35
Other Agents	481	566	553	564	585	648	583	591	703
Accidental Deaths	**514**	**597**	**588**	**598**	**619**	**691**	**620**	**636**	**738**
Suicides—									
Carbolic Acid	73	117	167	224	163	176	169	167	134
Other Agents	228	253	334	356	309	328	325	354	320
Suicides	**301**	**370**	**501**	**580**	**472**	**504**	**494**	**521**	**454**

THE SOCIETY'S ANNIVERSARY.

The proceedings at the annual dinner and meeting of the Pharmaceutical Society are so fully reported in the present issue of the Journal that no further reference thereto is required. By contrast with the celebration of the Society's sixtieth anniversary last year, the proceedings seemed somewhat dull, but it was evident that the members continue to take a keen interest in the work of the Society, and are not dissatisfied with the manner in which their interests are looked after by the Council. As further evidence of the latter fact, it is interesting to note that the whole of the retiring members of the Council have been re-elected on the present occasion.

ANNOTATIONS.

The Reply of "Curriculum" to the query addressed to him last week is satisfactory inasmuch as it is direct and unqualified (see p. 465), but it may be doubted whether pharmacists generally will agree with him in regarding a period of one or two years as sufficient for pharmaceutical students to learn all they ought to know about the practice of pharmacy, prior to presenting themselves for the qualifying examination. He speaks of candidates attempting at present to learn all they ought to know in the ridiculously inadequate period of three months, but he overlooks the fact that they have previously spent several years in gaining a knowledge of practical pharmacy. It is, of course, unfortunate that the technical applications of certain sciences should be learnt before those sciences are studied systematically, as is so frequently the case in pharmacy at present, but if the whole of the student's shop training is to follow an intermediate examination in science, it is to be feared that the apprenticeship difficulty will be intensified without any compensating result, as it is not easy to see how a candidate's technical and practical knowledge will be improved by further limiting the time during which he is expected to acquire it. At least three years' practical training should be insisted upon, but it would be unreasonable to interpose so long an interval between the proposed two parts of the qualifying examination. That is the chief difficulty which presents itself in connection with the scheme suggested by "Curriculum" last week, according to which an examination in chemistry, physics, and botany would precede the final examination in the technical subjects.

At the Same Time, there is not the least doubt that it would be an unmixed advantage if the candidate's knowledge of science could be systematically acquired sufficiently early in his career to enable him to apply that knowledge in studying the varied applications which are included under the head of pharmacopedics, or the scientific study of drugs and their preparations. As was stated last week (p. 440), the qualifying examination must, in any case, continue to be an examination in chemistry, physics, and botany, so far as those sciences are applied in pharmacy, but there does not appear to be any particular reason why the purely scientific knowledge should occupy so much attention when candidates are being examined to prove their fitness to practise pharmacy, and so secure registration as chemists and druggists. An obvious way out of the difficulty would be to require candidates to present certificates in chemistry, physics, and botany from some approved examining body, just as is now done in the case of the preliminary examination. The pharmaceutical examiners would then be required only to test a candidate's acquaintance with the practical applications of those sciences in his own business. But, in order to make such an alteration in the requirements fully effective, it would be necessary to have powers to insist upon a course of instruction in science preceding examination in that branch of knowledge, and it would also be necessary to insist upon a certain interval elapsing between gaining the certificate in science and entering for the final, qualifying examination. It may be urged that what is here suggested does not differ materially from the scheme proposed by "Curriculum" and others, but in reality there is a very material difference, altogether apart from the question of establishing a curriculum. The effect of casting the onus of testing the student's knowledge of pure science upon external examiners would go far to relieve any strain upon candidates at the qualifying examination, without interfering to any extent with the regular shop training; with a curriculum in addition, such a plan would result in an enormously larger proportion of the candidates studying to know rather than merely for the sake of passing an examination.

The Term "Curriculum," by the way, requires interpretation as used in this connection. There is no reason why it should be regarded as implying attendance at courses of lectures, the essential point being that the study should be continuous from the time of passing an approved preliminary examination and becoming apprenticed, until, not less than three or four years later, the student presents himself for the qualifying examination. No better curriculum can be arranged, so far as the business of pharmacy is concerned, than the mixed course of instruction in shop, book, and laboratory work which was formerly undergone by so many leading pharmacists and is even yet available in some good class establishments in different parts of the country. Unfortunately, however, pharmacists generally are nowadays unwilling, or find it inconvenient, to impart such instruction to their apprentices, and the only practical way in which the latter can be induced to work continuously at their studies appears to be by the establishment of a compulsory curriculum. Such a course of study need not interfere with the ordinary shop training, but ought to be so planned as to supplement the latter and lay such a foundation in pure science as will enable the student to obtain a more thorough grasp of the technical applications upon the practice of which his future livelihood will depend. A course of instruction such as is given in schools of pharmacy should be regarded as simply putting the finishing touches to the student's education, and, if the matter were generally regarded in that light much more rational finishing courses could be planned, with the object of turning out accomplished pharmacists rather than satisfying the minimum business requirements of the moment. Before leaving this subject, attention may be directed to the admirable letter by Mr. John Ingham, which appears in this week's Journal (see p. 464). A careful perusal of that letter, and particularly the introductory portion thereof, should prove advantageous to all who are now advocating division of the qualifying examination, without the simultaneous establishment of suitable educational provisions.

The General Medical Council opened its seventy-fourth session on Tuesday, May 27, when the President, Sir William Turner, occupied the chair, and delivered the customary address. He stated that the scheme of inspection during the present year, of the final examinations of the English universities and the Irish corporations, has been arranged, and that members of the Council have consented to act as visitors along with the inspector. Arrangements are also being made in accordance with a resolution of the Council for a visitation of the next examination in chemistry, physics, and biology of the Conjoint Examining Board of the Royal College of Physicians of London and the Royal College of Surgeons of England. The Council has also intimated that it is desirable to have the examinations in chemistry, physics, and biology, conducted by the licensing bodies generally, visited and reported on. No visitation of the examinations in the ancillary fundamental sciences on which a medical education is based has been made since physics and biology became a compulsory part of the curriculum of study required by all the medical authorities, and it does not appear that a visitation of the examinations in chemistry has been made since the medical and surgical corporations in the United Kingdom were reported on in 1881-82. No progress has been made in Parliament with the Penal and Disciplinary Bill prepared by the Council some time ago, and read for a first time during two sessions. Owing to the pressure on the time of Parliament by the introduction of measures of more general scope and interest, there seems but little hope of making progress with the Bill until the Government is prepared to take a more active interest in it. A special Indian edition of the 'Addendum to the British Pharmacopœia' has been prepared and published, and the Government of India has purchased the greater part of the first issue of 4,000 copies. Sir William Turner also stated that the General Medical Council has been requested by the Privy Council to send a delegate to an International Congress to be held in Brussels on the subject of a proposed International Pharmacopœia limited to drugs of a drastic nature. At the May session, held in 1900, the President was authorised to appoint one or more members to act as delegates, and the Chairman of the Pharmacopœia Committee has, at his request, kindly consented to represent the Council.

EVERY REGISTERED CHEMIST should make a point of carefully reading the article on photographers, pharmacists, and poisons, which is reprinted in this week's *P.J.* (see p. 458) from the *British Journal of Photography*. That important organ has not always been distinguished by the accuracy and fairness of its comments on matters appertaining to the business of chemists and druggists, but the article referred to is beyond criticism in those respects, the writer evidently being both well-informed and capable of forming a just estimate of the position of affairs in regard to the sale of poisons. As he clearly shows, for a great many years pharmacists have had an intelligent appreciation of the poison danger, and have taken every possible precaution to protect the public against that danger. But it is impossible for the most conscientious pharmacist to exercise watch and ward over poisons after they have passed from his possession, and, if further legal restrictions be required, it seems as though they should be made to apply to purchasers rather than sellers of poisons. The pharmacist may, and does supply poisons in suitable receptacles, properly labelled, but cannot ensure that purchasers will retain them in those receptacles and thus do what is requisite to protect others. So careful has the pharmacist been to anticipate any demand for further restriction of the sale of poisons that the use of the poison label has been overdone, and familiarity therewith has bred the usual contempt. The late William Martindale was a strong advocate of greater discrimination being exercised in the use of poison labels, holding that it was not always wise policy to let the public know how potent are many substances which are freely available for misuse. With that view many pharmacists are in full accord, believing with the writer of the article under consideration that, in many instances, a note of warning that the substance requires careful handling would answer all requirements. For the rest, pharmacists who have ever felt the need of arguments in support of their peculiar position as retailers of scheduled poisons will do well to read, mark, learn, and inwardly digest the article in question, in order that they may avoid being at a loss for satisfactory reasons in defence of their conduct on occasions when they consider it desirable to refrain from selling poisons, or find it necessary to refuse to supply them except under conditions which experience has proved to be necessary in the public interest.

A STRIKING EXAMPLE of culpable negligence in connection with the storage of poisons was furnished quite recently (see *P.J. ante*, p. 442), when a limekiln proprietor at Tiverton lost his life through partaking of porridge which had been accidentally made with poisoned oatmeal. Arsenic had been mixed with the oatmeal about two years ago, the mixture being intended for killing blackbeetles, but the "baking-powder box" containing it was kept in a cupboard, along with groceries for household use, in such a way that it would have been marvellous if an accident had not occurred sooner or later. The jury found that death was caused by misadventure, and expressed sympathy with the members of deceased's family, but there surely never was a case in which some form of censure was more plainly indicated. If it had been shown at the inquest that any lack of care had been displayed by the chemist who originally supplied the arsenic, the jury would doubtless have appended a stinging rider to its verdict, while the coroner would have been at some pains to animadvert upon the shortcomings of the unhappy seller. In the present instance, as it happened, the coroner was able to appreciate the situation, and put the blame upon the right shoulders, for he expressed a strong opinion that poisons kept in private houses should always be stored apart from all medicines or food, besides being kept in proper receptacles. Further, he added that, if such regulations as are imposed on chemists by the Pharmacy Act were also observed in households, the necessity for holding the inquest which he was conducting would not have existed. It is noteworthy that, only the day before, the Grimsby coroner had occasion to give utterance to some similar observations. The mate of a steam trawler, being thirsty, went to a recess in the engineer's berth to get a bottle of herb beer, but took, instead, a similar bottle containing a solution of zinc chloride, used for soldering purposes. The dangerous nature of the contents was not indicated upon the bottle, and the unfortunate seaman drank the contents and died. In this instance also the jury seems to have been content to return a verdict of "Death from misadventure," but the coroner took the trouble to point out what a reprehensible practice it is to leave poisons unlabelled, in bottles resembling others containing beverages and kept in close proximity. It is greatly to be feared, however, that the public generally will not profit by such painful experiences, though in time further more or less useless restrictions may be imposed upon the sellers of poison, who already take more precautions than the law requires, without any compensating benefit to themselves.

THE BRITISH DENTAL ASSOCIATION held its annual meeting at Shrewsbury last week, and the President, Mr. W. E. Harding, referred, in the course of his address, to the company difficulty. He described as a most glaring anomaly the decision of the courts that, under the wording of the Dentists Act, a company might do what the individual might not, and urged that every effort should be directed to remove that anomaly. He thought a short Act, such as the Lord Chancellor introduced some three sessions ago, was all that was required to meet this weak point, and said it was a great disappointment to dentists when Mr. Ritchie threw overboard the clauses referring to dental practice in the Companies Act of last session. The first thing was that dentists must be thoroughly agreed amongst themselves as to what they wanted and, when their leaders considered the time ripe for action, every member of the Association, indeed, every reputable practitioner, must do his utmost to get the Bill through the House of Commons, especially by putting pressure on members of Parliament; not leaving it to be done by their Executive, but each man putting his own shoulder to the wheel. In the meantime they must each do their best to educate the public, and especially members of Parliament, as to what they wanted and the justice of their demands, not only in the interest of the profession, but for the protection of the public. The quack and the charlatan, like the poor, they would always have with them; but they hoped to prevent the wolf from masquerading in sheep's clothing. Pharmacists might make a note of these eminently sensible remarks, especially those referring to the necessity of individual effort.

POISONING CASES.

The poisoning fatalities reported since last week number nineteen—five accidental cases and fourteen suicides, thus:—

Poison.	Accident.	Suicide.
Carbolic Acid	1	4
Copper Sulphate	—	1
Hydrochloric Acid	—	3
Laudanum	—	1
Oxalic Acid	—	1
Potassium Cyanide	—	2
Ptomaines	1	—
Prussic Acid	1	—
Strychnine	—	1
Sulphonal	1	—
Sulphuretted Hydrogen	2	—

Carbolic Acid was the cause of death in the case of a Glossop weaver, a woman at Norwich, a girl of sixteen at Manchester, a woman at Stafford, and a young child at Fordingbridge, all but the last being suicidal cases.

Copper Sulphate, in a battery solution also containing sulphuric acid, was purposely taken by a compositor at Stoke (Surrey).

Hydrochloric Acid was taken by a painter at Bow, London, and by a Liverpool brass-moulder; it is also supposed to have caused the death of a Hammersmith man, who was shown to have taken some corrosive poison.

Laudanum was taken by an old woman at Rockferry, Birkenhead, who had been living alone for some time.

Oxalic Acid caused the death of a Llanelly fishmonger.

Potassium Cyanide appears to have been taken by a sculptor living in Holloway Road, London, who died some hours after being found lying on the steps of the Great Northern Hospital. The same poison was taken by a suspected coiner at Manchester, who had been arrested by the police, and is supposed to have had the cyanide concealed in his cork leg.

Prussic Acid was taken by a Coggeshall man, who had formerly acted as assistant to a veterinary surgeon.

Ptomaines from mackerel appear to have been the cause of the death of a Nottingham insurance agent.

Strychnine, taken purposely, caused the death of a publican at Kidderminster.

Sulphonal taken in excess proved fatal in the case of a retired army officer at South Kensington.

Sulphuretted Hydrogen killed two labourers employed at the South Metropolitan Gas Works, London.

Non-Fatal Cases.—Carbolic acid, laudanum, and oxalic acid have been the poisons used by several would-be suicides.

OBITUARY.

Bettle.—On May 5, Frederick Selby Bettle, Chemist and Druggist, Wellington. Aged 65.

Cull.—On May 17, Joseph Cull, Chemist and Druggist, Hounslow. Aged 83.

Evans.—On May 12, Thomas Evans, Pharmaceutical Chemist, Liverpool. Aged 80.

Jones.—On May 12, David Alban Jones, Chemist and Druggist, Aberayron. Aged 33.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN

ANNUAL MEETING.

The sixty-first annual meeting of the Society was held at 17, Bloomsbury Square, London, on Wednesday, May 28, at 12 o'clock, the chair being taken by Mr. G. T. Wilkinson Newsholme, the President.

The Secretary having read the notice convening the meeting, the annual report of the Council was taken as read, and the President then proceeded with his address.

The President's Address.

The President said: Gentlemen,—In moving that the sixty-first annual report and financial statement be received and adopted, I would like to refer briefly to the chief items of revenue and expenditure, with a view to explaining broadly the position of the Society. Of course, any member present will be perfectly in order to criticise individual accounts and ask for information concerning particular amounts, but I think it will be convenient for the meeting if I first take a general consideration of the balance-sheet, reserving any detailed explanations—if they should be necessary—until later. The sixtieth year of the existence of our Society has to be recorded as one of the "lean" years. Comparison with 1900 reveals a difference of over £4,500 on the wrong side of the account book, and we have to read in our balance-sheet the unpleasant line "deduct balance of revenue account, £1,654 2s. 7d." I do not suppose that our experience is singular in finding two or three years of comparative plenty followed by a period of reaction, and I do not think that we ought to be unduly depressed by what is after all a perfectly natural and (so far as the Council is concerned) clearly foreseen occurrence. During 1899 and 1900 the Society's revenue was largely augmented by the rush of candidates to anticipate the operation of the new Bye-laws coming into force after July, 1900—but there was no such stimulus last year, and the changed conditions manifest themselves with full force in the first balance-sheet of the transitional period. The net income from examinations in 1900 was £8,104, and in 1901 it only reached £5,245, so that our £1,654 deficit is more than accounted for by this falling off in fees, if one likes to look at it in that way. There might be some ground for apprehension if this diminution of revenue were likely to become permanent or progressive, but I see no reason to doubt that a normal condition will be restored in due course—perhaps sooner than some pessimistic minds anticipate. Speaking for the Council, I may venture to say that we do not regret the step taken in abolishing the old preliminary examination, and in spite of the evil consequences that have been attributed to that action, we believe the time will come when it will be recognised as a policy of wisdom and a decided impetus to pharmaceutical progress.

The School of Pharmacy.

The other items of revenue approximate nearer to the average. School fees have been £140 less, and I am sorry to find that the anticipations of the Council in regard to the School have not been realised. You will remember that the Vice-President, who occupied this chair this time last year, expressed a confident hope that the falling off of school fees would be temporary, and that the opportunities—one might say the unique opportunities—afforded by the Society's School for providing a thoroughly efficient pharmaceutical training would be more largely utilised as years went on. In this hope his colleagues most certainly participated. I cannot, however, indicate to you any signs of an early fulfilment, and though last year was a bad year in more callings than pharmacy, it is unwise to disguise the fact that the School is not receiving, and has not been receiving the support which the money and attention bestowed upon it by the

Council justified us in expecting. It is not the loss of £140 in fees that is, to my mind, the serious consideration—as a matter of fact, from a pecuniary point of view the School account is better in 1901 than it was in the preceding year; the net cost being £1,052, as against £1,218—it is not the monetary position that induces serious reflections, but rather the broad question whether in expending £1,000 or £1,200 a year in maintaining this worthy tradition of the days of our founders, we are doing the highest possible good in the way of "promoting a uniform system of education" for those who shall practise the pharmaceutical calling? I yield to no man in reverence for the past work of the School of Pharmacy or respect for the memory of its distinguished teachers and students, but it does occur to me that possibly our duty to present and future generations of pharmacists may require some modifications of traditional policy. This is a matter which you may be sure your representatives on the Council will very carefully consider in connection with technical education in Great Britain generally. It may be that the developments in university teaching now going on around us will make it possible before long for students to regard the university as the natural gateway to a pharmaceutical qualification. At any rate, we must not shut our eyes to the important changes in progress in educational matters, and I hope you will absolve me from any idea of disloyalty to our School in making the remarks I have. Annual subscriptions to the Society show an increase of over £200 on the year, but a slight decrease in the number of members. Both facts may be accounted for by the number of persons who have been taken from the annual list and transferred to the roll of life members. There seems a growing disposition among the younger men to become life members by the payment of ten guineas down, and I am scarcely surprised, for it is a good investment for the "life compounder" if not for the Society.

THE PHARMACEUTICAL JOURNAL.

Turning now to the other side of the account, the two great items of expenditure which show any marked increase are those relating to the Journal and to law costs. In regard to the former there is an adverse balance of £2,285, or £800 more than in the preceding account. I employ the words "adverse balance" in their descriptive sense and must not be understood as implying anything more than that the balance of the account is on the expenditure side. The Council has felt that these figures are too high, and indicate the need for a more economical basis in the production of the Society's official organ. I have noticed evidences of alarm in certain provincial towns, and there appears to be an altogether unwarranted fear that the Council is proposing to enter upon a "starvation" policy, and generally to act in a foolish manner in spite of expert advice and warning. I do not know the origin of these ideas, but they are not very flattering to the members of Council, who, however, seldom get enough flattery to spoil them at any time. I am glad of this opportunity—the first that has occurred—of dispelling the fears of agitated members at Bradford and elsewhere. The Council has determined to see to two very simple matters that should commend themselves to every member—they are first, that whatever money is spent upon the Journal, the members shall have money's worth, and secondly that the Journal shall be produced at the lowest possible cost consistent with efficiency. That is a mere business determination, and need not be disturbing to business men. The Journal is your property, gentlemen, and I conceive that it is the duty of the Council to ensure that the money spent upon it shall improve the property—otherwise it is simply thrown away. It is not expedient that I should enter upon a more detailed discussion on the subject, but I may tell you that the Council has now before it the consideration of what changes may be desirable in the conditions under which the Journal is at present produced and published, and I hope that my successor in this chair next year may be in the fortunate position of announcing that you have an improved Journal and a largely reduced adverse balance.

LAW COSTS AND OTHER ITEMS.

The law costs have been exceptionally heavy during the past year—the net cost of that department of our work being nearly £1,500. When it is considered that this is in addition to the penalties and costs recovered, one is apt to imagine that we are buying our law in a dear market. But you must remember that the year has been marked by a number of somewhat expensive processes, which have been in the nature of test cases, and have enabled us to obtain important interpretations. It is said on authority that omlettes always involve the breaking of eggs, and the truism applies also to such legal luxuries as appeals. To a very large extent the law costs may be taken as a measure of the activity of the Council in protecting the public—and incidentally registered persons—from unqualified persons, so that a heavy bill is not altogether an unmixed evil; but it may seem a little hard that work which is done for the public has to be paid for by the members of a voluntary Society, and that 10,000 chemists who are benefited by the decisions obtained in the courts should be content to allow the same association of voluntary subscribers to bear all the burden. I shall have to speak later on of the cases which have proved the most expensive, but I may say here that a large portion of our outlay (£980, or thereabouts) has been in respect of the administration of the law in Scotland. For England and Wales the cost has been about £500, which includes £150 for our supplemental charter, and £65 balance of costs in the White appeal case. On the whole I do not think the Council is to be charged with undue extravagance in the conduct of the law cases—the first consideration must always be to win your cause rather than to anticipate the reckoning, and in order to do so the best men must be requisitioned and consulted. It is not always the actual fighting that costs the money, but the preparation for it; as an instance I may say that the presentation of the case to the Medical Council against the employment of unqualified assistants in the doctors' shops, involved two or three journeys to London of our solicitor in Edinburgh, and of our Mr. Rutherford Hill, who also had to arrange for the evidence to be obtained in Glasgow and other places in the West of Scotland There were also consultations in London with counsel, and an enormous amount of documentary testimony to be collated and considered. This cost considerably over £300, and not a farthing of the outlay was recoverable. I do not think we shall be called upon to deal with such an exceptionable state of affairs again, but if we are I hope you will not complain if the Council promptly and vigorously responds to the demand, though it may swell the adverse balance of the law account.

The other items of expenditure are pretty much as usual, and call for little comment from me. The Library account is £178 larger, but that is explained by the £175 which the new edition of the catalogue cost to issue. The sundry expenses in connection with the Museum also show a slight increase which will, I feel sure, not be objected to by any one. The North British Branch, too, has cost more—the total increase is about £30, and two-thirds of it is under the head of "miscellaneous expenses." I could explain in detail how and why the money has been spent, but it is hardly necessary to do so. I ask you to take my word for it, as one who knows from personal knowledge and observation of the Branch, that that extra £30 represents a good deal of extra work, the pharmaceutical value of which cannot be represented in a financial statement.

And now I come to an item of expenditure I would gladly see doubled, and that is the £108 2s. 11d. spent upon local organisation. I may be open to the retort that this subject is to me like the head of King Charles to Mr. Dick, but be it so, I am convinced that the future of pharmacy is to a large extent dependent upon the character of the internal organisation of the Society. An imperfect, indifferent, or incomplete system will give little protective value to the Society, and that body instead of being a living power must remain a monument of glorious possibilities. I do not want the Society to acquire a monumental reputation of that kind, I do not see why it should always be a potential rather than an actual influence, and that perhaps explains my reiterated appeals for a more highly-developed local organisation. At present my ideas have been partially put into practice, and I must express my acknowledgments to the Registrar and his staff for the great pains taken in arranging the thousand and one details which the new scheme necessitated. But I have learned enough of the working of the scheme during the past year to tell you that it will not accomplish its object—and the object I had before me when I first suggested it—if it is to be confined to the narrow limits accorded to it to-day. It requires more "spade work," if I may borrow a political simile, and to prosecute this species of preliminary labour effectively needs more money. There is, however, another need that money cannot buy—*men*. If we could secure the services of a few additional really earnest local officers, we might go far with a very little money. I take this public opportunity of expressing my personal indebtedness to the local officers for the help they have given. The Council has already passed a formal vote of thanks, but I am glad to add my own expression of gratitude for the really large volume of valuable information they have placed in the possession of the officers at headquarters.

The foregoing are the chief items in the statement before you, and I do not think further comment on the balance-sheet is called for. A number of minor economies have been effected in the general administration, and I do not anticipate any objection on that score. I would like to warn members, however, that in the ordinary progress of events the secretarial staff must be gradually increased, and that the wages bill must be expected to rise accordingly. It was recently decided to place the Society on the telephone service, and we have several other business developments in progress intended to bring the Society's organisation into closer accord with modern commercial ideas; but progress has its obligations as well as its advantages, and if you see a larger sum next year for salaries I hope you will make allowance for the benefit bestowed upon the Society by having an adequate and efficient clerical staff to transact the detail business.

The Annual Report.

With regard to the report of the Council, which has been distributed to every member and published in the pharmaceutical press, I do not know that there is much occasion to amplify the official statements, bald as they are. The fact is that in these days when the Council does almost everything under the observant eyes of press reporters, there is no scope for effective annual reports. All the important transactions of the Council have been published from time to time, together with a good many of the unimportant items. So that the report is now little more than a reiteration of more or less wearisome matter that has been common knowledge for some time; Olympus has very little thunder left by May, I assure you, and it becomes increasingly difficult for a pharmaceutical Jove to conserve even a semblance of awe-striking attributes for twelve months on end.

In respect to the Government visitor's report on the examinations, and his strong expression of opinion that compulsory courses are required in at least chemistry and pharmacy, I would like to remind you that we have referred the Privy Council to their ruling in 1886, when we tried to do what Dr. Stevenson thinks is so essential, and we have, I fancy, driven home the point that if there are no "compulsory courses" it is certainly not the fault of the Pharmaceutical Society. Their Lordships have taken up the attitude that we have no power to institute these courses under our present statutes, and no doubt their position is based upon the advice of the law officers of the Crown. All we can do, therefore, is to convince the Department of the futility of calling our attention to desirable lines of conduct unless it is prepared to help us to obtain the necessary powers to follow such lines. I hope that before very long we may have the power of interposing "periods of time and courses of study" between parts of the qualifying examinations; the time appears ripe for both, and the draft clause of the Pharmacy Acts Amendment Bill designed to effect the improvement is already in the hands of the Government.

Glancing for a moment at the Society's legal work, I would impress upon members the large amount of time and the infinite pains spent over these reported cases of infringement. The task of dealing with 409 cases—which is nearly double the number in 1900—is by no means a light one, and you can easily appreciate the importance which the Council attaches to its duties as prosecutors under the Acts when I say that the bulk of our time each month is taken up in considering the evidence in these cases and the allied circumstances. As I said earlier in my remarks, the law costs have been exceptionally heavy, but it has been found necessary to take up one or two flagrant 17th Section cases—notably one case in Staffordshire, where nicotine was sold labelled "brandy," and caused death—and also in Scotland, where it was sought to rule our Registrar out of Court as having no title to sue. The cost of such cases is somewhat higher than some of the 15th Section cases, for the Society can recover no penalty under summary procedure in England. Still we have the satisfaction of knowing our exact position in regard to prosecutions under Section 17 in Scotland, for the High Court has decided that the Registrar under the Pharmacy Act is the proper prosecutor in such cases. We also know that the practice of not paying penalties after conviction is no longer a safe game for defendants in Scotland, since the High Court has declared that the sheriff may attach to his judgment an alternative of imprisonment in default of payment. It was worth while spending a few pounds to stop the old finger-snapping at justice.

Included with law, too, are some Parliamentary items, such as the draft Pharmacy Bill, concerning which our solicitors in London and in Edinburgh have been consulted and counsel employed. The Council also found it expedient to protect the Society's property by entering an action for trespass against one of our neighbours in Great Russell Street. The differences have been amicably adjusted and the rights of the Society acknowledged and confirmed.

I do not think I need say any more on the report itself; but I must for a few minutes allude to the last paragraph, which perhaps is the most painful one in the whole report. We have lost by death during the year several men who were distinguished in pharmacy; their names are set out here in this list. When we hear of the death of men who have been closely associated with us on the Council, either at the present time or in years gone by, we are bound to admit that the loss has been an exceedingly heavy one. During the year we have lost Mr. Martindale, past-President of the Society; Mr. Davenport, also a past-President of the Society and for many years a member of the Board of Examiners for England and Wales; Mr. W. B. Randall, a past member of the Council, and many others not quite so closely connected with us, but yet known to us, and who have taken a particular interest in the doings of the Society. I have referred previously at the Council and in the country to the death of our old colleague, Mr. Martindale, and I need not say any more, because I know that which is in the heart of every member here is in my own, and that is the utmost respect and admiration which we had for Mr. Martindale. There has since the report has been issued also occurred the death of another member—I refer to Mr. Andrews, who was in this house not very long ago. He had been a regular attendant at the meetings of the Council and the annual meetings of the Society, and was a man whose opinion we valued, and who did his best for the Society in every way. I will say no more now, except content myself by moving the resolution that the annual report, with statement of accounts, as published, be received and adopted.

The VICE-PRESIDENT: Mr. President and Gentlemen,—I have much pleasure in seconding that resolution. I do not propose at the present moment to say anything about it, but perhaps you will allow me to say something by and by if necessary.

The PRESIDENT: The report is now open for discussion, if any member wishes to make any observations upon it.

Mr. WRIGHT (Yeovil): Mr. President and Gentlemen,—Our President has made a serious allusion to the Journal. I see myself no cause for alarm, even if there is an adverse balance again with regard to it. The Journal, according to the statement in the annual statement of profit and loss, is, I am sure, not correctly represented to us; in fact, I regard it as positively misleading, because it leads to the mistaken notion of estimating the cost of the Journal by the difference between the expenditure and the net amount we receive for advertisements. I think the actual cost per member is rather to be gauged by the net income relatively to a given expenditure, and I do not think, as members, we should grumble if the whole cost to the Society was 10s. 6d. per member. If we look, for instance, to an Association which we may take as something like our own in publishing a weekly journal— I refer to the British Medical Association—it lately published in its Journal a statement for 1901, by which it appeared the expenses were only £5,000, printing, paper, and postage, £21,000 odd, and the net return from advertisements and sales was £21,299, leaving an adverse balance of £5,956 16s. 6d., which, divided among 16,000 members, left for net cost to each member about 7s. 6d. In the same way, taking the adverse balance with regard to our Journal, shown in the annual statement, it works out at about 9s. 6d. per member. Now, if the net return of the *Pharmaceutical Journal* in 1901 had not fallen off, the cost would have been about 7s. per member, as it was in 1900; and if the net return of the *Pharmaceutical Journal* last year had been in the same ratio with the *British Medical Journal* the cost per member would have been only a little over 5s. So that we see that the greater or less amount of expenditure does not matter, provided it brings in a proportionate increase in advertisement revenue, and an increase in advertisement revenue requires that the Journal should be made attractive to readers, and this could only be gained by making the Journal more suitable for all sides, and the consequent expenditure in regard to printing, paper, and every other kind of detail. The object of enlarging the scope of the Journal, I take it, was in order that it might induce chemists outside the Society to become members by the Journal being made more attractive to them, and more suitable for their requirements. In proportion as this success was obtained increase of expenditure occurred, and it seems to me this increase has been the only thing about it appreciated by the Council; hence their resolution that the best way to improve the position was to cut down the Journal to twenty pages per week. Now, if the matter is to be dealt with week by week it cannot be got into twenty pages, and it will cause dissatisfaction, and consequent falling-off in advertisements. I believe this is going at the present time. The advertisements are getting less and less week by week, and that, I believe, is owing to tardy publication. The great desideratum at the present time is increased revenue from advertisements, and that can only be secured by an increase in the circulation. Why not revert to the old plan of issuing the Journal to those not belonging to the Society at 10s. per year? This would be perfectly advantageous to the Society, because the circulation would be thereby increased. To cut down expenditure is an excellent maxim, but nowadays business requires you to provide for success by payment in advance, and the only alternative is a back seat for those who cannot or will not conform to that rule. The President made a reference to the resolution of our friends at Bradford. I take that simply to express their anxiety that the Journal should not be relegated to the list of things that have been. We have a valuable property if it is properly dealt with, but there is a fear that it will be lost if it goes on. What is the value of work like this compared to the value of £15,000 for other purposes? Surely there is an item in that expenditure which might be cut down. I feel myself there are gentlemen who are entirely adverse to the Journal, and who look upon it as a drain upon the sources of the Society. If there are such gentlemen, I must say they have not met from the beginning to the end the depth of feeling that there is among our provincial members with regard to the Journal.

Mr. CAMPKIN: Mr. President and Gentlemen,—Mr. Wright has spoken with deep concern regarding the circulation of the Journal, and I am sure we are somewhat indebted to him for his friendly criticism. I do not propose to speak in that direction, but simply to those remarks that have been made as to the cost of the Journal. That, I take it, is not to be considered in a mere financial sense, because it brings the members in touch with the executive body week by week, and is useful in the dissemination of information in all directions. It has its contemporaries, and it is appreciated equally, I believe, by various classes in the country. But the pessimistic note that you sounded in your address as to the want of progress on the part of the Society during the past year is one that should cause us to consider more completely our position as individuals, and our indebtedness to the Society as the only organisation with which we are brought in contact. The general body of registered chemists and druggists—and you have mentioned, I believe, some 10,000 who are not already in touch—are frequently complaining of the action of the executive as not representing them. Now we who have to do with matters of local organisation frequently find that complaint expressed, and it is difficult to convince the general body of chemists and druggists that their needs are sufficiently attended to by the Pharmaceutical Society itself, and all the work that the Society has undertaken with regard to local matters is not sufficiently known to them, nor have they any knowledge of the expenditure that you, as an executive, make in their interest from time to time. The average chemist does not, perhaps, take great interest in the outside world. He is somewhat circumscribed—he has other attractions, and he is limited by those attractions, unfortunately. What he does require is, first of all, the protection of his title. Then, again, he requires the recognition of his position as a qualified and a registered man by protection against the unholy competition which he has to face by unqualified dealers, and in that he is apt to accuse the Council of supineness, whether rightly or wrongly, that is not for me to say. I think, perhaps, wrongly, but the fact remains, and it is impossible, unless the Council can give some more public information with regard to the position they take up, to get the average chemist to believe entirely in the Society as of any value to him. I hope, by continued action, they will do so. The general feeling is that there has been too little notice of that decision that was given early in the eighties—I believe in the year 1881—and it is generally supposed that there has not been a sufficient attempt on the part of the executive of the Society to reverse that decision. That it was a final one, inasmuch as it was the result of an appeal to the

House of Lords, is undoubtedly true, and has been given us as an answer again and again in this room. But that it should be an excuse for no further legislative attempt is not regarded as satisfactory by the general body of chemists. There have been attempts, undoubtedly, by means of the draft Pharmacy Bills also, but the attempts appear to have been failures, and even at the present moment it seems impossible to submit anything in that direction, because, although we have at the present moment a Government with a majority—the largest majority on record—yet it is the weakest and most powerless Government we ever had, or that has ever been known in the history of this country. All legislative action of such a character as this has gone by the board, and that will probably be the result of any further attempts. But, at the same time, I take it the Society will be failing in its work if it does not continue to make the attempt to secure that recognition of a qualified and registered man that it should do in order that they should be protected against such unholy alliances as they are at present subjected to. Undoubtedly the difficulty lies in the House of Commons itself. A great many of the individual members thereof are more concerned in profits that have been made by association with limited liability companies, and in no sense actuated by that altruistic principle that we look for from gentlemen of their position, and we hope some of us are imbued with. We trust we all of us do not live for ourselves alone, but we as individuals endeavour to live and work for the best interests of the community. If every local organisation would only take upon itself to bring home these facts and these injustices to their local members, I venture to say the tone of the House of Commons would be vastly different to that which it is at the present time. My experience in that direction has been that there has been a lamentable ignorance on the part of the members of the House of Commons with regard to the grievances and injustices under which we as registered and qualified men labour. With regard to local organisations, I would advise that they should be extended and multiplied, and that they should bring these matters more directly under the notice of their members in the House. We have seen recently how easy it is to teach and to sway a member of the House of Commons. He is generally on the look-out for votes, and at the back of that is the influence that can be brought to bear by ourselves. If a body of men—such an intelligent, educated body of men as are the chemists in this country—were only to unite they could accomplish greater things in the future than they have done in the past, and if, instead of sitting and grumbling, they would only set to work and endeavour, by putting their shoulders to the wheel, to help themselves and help you, I feel sure that the result of any future attempt at legislation would be successful, and would be appreciated by the registered chemists throughout the country at large. If you show that you are labouring for their protection, I feel sure that no appeal to the whole of these 10,000 men would be made in vain. If they did not all become members—and it is open to them to do so, thanks to recent legislation—they would, at all events, I am sure, bear their share in any of the expenditure which they would consider just and for their interest which might be incurred by you. I hope, sir, the result of the next year's work of the Council will be, at all events, in the direction which I have indicated.

Mr. **Campbell** (Shepherd's Bush): Mr. President and Fellow-members of the Pharmaceutical Society,—Allow me to draw your attention to a matter affecting the vital interests of our profession and trade. In our Charter of Incorporation, Section 15, these words occur:—"From and after the 31st day of December, 1868, any person who shall sell or keep an open shop for the retailing, dispensing or compounding poisons, or who shall take, use, or exhibit the name or title of chemist and druggist, or chemist, or druggist, not being a duly registered pharmaceutical chemist, or chemist and druggist, or who shall take, use, or exhibit the name or title pharmaceutical chemist, pharmaceutist, or pharmacist, not being a pharmaceutical chemist, or shall fail to conform with any regulation as to the keeping or selling of poisons made in pursuance of this Act, or who shall compound any medicines of the British Pharmacopœia except according to the formularies of the said Pharmacopœia, shall for every such offence be liable to pay a penalty," etc. Now, gentlemen, in looking around me I observe a considerable number of drug shops, many taking the title of chemists and druggists who are not on the Register of Chemists and Druggists, and especially I may mention Parke's Drug Company, Day's Drug Company, and Boots' Store Chemists, with other shops. I made inquiry at the Society's office the other day for the name of the individual who is responsible for Parke's Drug Stores in Shepherd's Bush—in my neighbourhood—but I was not made any the wiser, nor could they give me any information as to who was the responsible manager of Parke's Drug Stores at Holland Park. There are about 200 of these shops, but they cannot give the responsible manager of any of them. That is a very serious matter, and I admit that it is a very difficult task at this late date to remedy, but it must be done, or otherwise our Charter will become useless. I am sorry to say these companies are supported in their illegal carrying on of business by several leading London chemists, some even belonging to our own Council, who conduct their businesses under false names, known as trade names. Gentlemen, no chemist has a legal right to keep open a shop unless he uses his own name only over his premises. No man can be in two or more places at one and the same time, and therefore no chemist has a legal right to conduct more than one shop. As a member of the Pharmaceutical Society, I beg the Council to undertake to look into this evil and try and remedy it as soon as convenient, as many members of the trade have their eyes on the members of the Council in reference to this matter, so vital to their trade interests.

Mr. **Pentney**: May I ask under which head in the receipt comes the amount of fines that are recovered by the Pharmaceutical Society? I do not see it under any special heading.

The **President**: It does not appear in the statement here. It is simply balance of account. If you carefully read the report you will see it says "Balance of account."

Mr. **Pentney**: That seems rather indefinite. Mr. President and Gentlemen,—I cannot agree with all that my friend here says, but he has a very strong point when I tell you that a great many chemists who are outside this Society express in a very rough way perhaps, and in a very wicked way, what our friend here says, that the reason why they will not join the Society is because, so far from protecting the interests of chemists, they look upon the Pharmaceutical Society as a fraud, a sham and a deceit. Of course they are very wicked to say so, but as far as protecting their interests goes, to a certain extent, they feel that they have ground for complaint. I know of one particular case in which a gentleman had given information of a person who was trading, he believed, as a chemist and druggist, and I believe to this day he does not know whether anything has been done in the matter or not. He gave the facts to the Council, but he has never heard anything as to the result. I think the least the Council might have done would have been to have acknowledged the information received and also have acquainted that individual with what had been done in the matter. The expenditure for "law costs," I, for one, do not complain of at all. I only wish that the law costs were incurred in prosecuting those who are trampling upon our rights, and who are trading as chemists and druggists when they have no right whatever so to do. It is very hard that a young man should spend all the money he has saved, or that his father has saved for him, in order to pass his examination, and find that the little shop further down from him is doing quite as good a business as he is and with no title whatever. I fear that this state of things will not only continue, but be aggravated, whilst the examination is kept as it is and not divided. It must be divided, or else we shall have some men who have failed in it setting up and trading in some shape or form. I hope that the Society will take more notice of this matter, and that there will be some organisation to discover whether these chemists are registered or not. We frequently find cases in the papers of chemists being prosecuted, and a foot-note by the editor of the *Pharmaceutical Journal* to the effect: "We do not find a person trading in this name." Should not the Pharmaceutical Society have some scheme by which they can know who is in business and whether he is registered or not? As regards the question of the Journal, Mr. Campbell and my friend behind me have dealt with it, but it strikes me that it is not right that a contemporary journal should be run so as to make good profits and that our Journal should be run so as to suffer a loss. We know that there is the distribution of the Journal to the members, but that does not seem to me to explain the cause of the loss, and the fact remains that a fat living is got out of it by the other journal, though why the *Pharmaceutical Journal* should not be in an equally fortunate position I fail to see. I think that the time has come for doing away with some of the fossilised ideas that have prevailed with reference to the Journal among the present members of the Council, and perhaps if some new ideas were introduced they would produce the desired result.

Mr. Hyslop: I rise to congratulate the Council of the Pharmaceutical Society upon the report which we are now investigating. I beg to ask the members and I beg to ask those outside, if they have any business at all in the matter, what is the use of limiting the system of election to a Council? Improvement takes place as time goes on so as to make it *au courant* with present ideas, and what is the use of all the foundations upon which we have been building, if when the Council is elected, members—I will not go any further outside the circle, because I have no occasion to—are irritable because time is required by their representatives on the Council to work out the policy of the Society in the manner that they think fit. In the small portion of London to which I am restricted I am again and again told that if first of all the Council will do something for us that we can appreciate, then we will join the Society and we will support the Society and so forth. But that, to my mind, is putting the pyramid on its apex. It is strange that a body of men who pride themselves upon being better men of business and better men of trade than the ordinary pharmaceutical chemist should adopt such an attitude as that towards the Society. I agree with what has been said by my predecessor, and I shall not detain you long, because I feel that we who are members of the Pharmaceutical Society should regard ourselves as under a cloud and shadow just now in having lost so many leaders—leaders of special types who can never be replaced. I think it is a suitable time for us to seriously consider how leaders in the future, generally speaking, are to be evolved, if I may use that expression. At any rate, I think our older friends should endeavour to grasp the situation in this respect, so that we may make provision for the future of this institution. While we speak of such matters as improvement of the Journal and other subjects which will never go out of date as a theme of criticism and discussion, we must remember that as long as there is a Journal it will be a publication *sui generis*. There is no other publication with the same definite and exclusive—I think I use the word "exclusive" properly—aims in view, and I would very much deprecate, and I know that the most intelligent and influential men with whom I have come in contact and have spoken to on the subject, would deprecate any endeavour to catch all sorts of fish by means of the *Pharmaceutical Journal*. The gibes and jokes and loose matter which disgrace the trade journals should not be imitated in a journal that has had such an origin as ours, and that has had such high ends in view, and exercised such a widespread influence. Let, if possible, the literary matter and the facility for giving news be improved and increased, but it grieves me when I look at my recent Journals to see big glaring advertisements on a page which I cannot cut out when I have to bind them up—glaring advertisements of glaring swindles, as if a man were bound to go down to the level of a mere huckster. I will say nothing more. On the question of what we are to do in the future with reference to the classifying and analysing those that are in the body outside, I say let us go forth with dignity, and do not let us bow and scrape, and do not let us surrender. The secret of the success of the trade journals and the apparent non-success of our Journal is that there is such a large element of juvenility abroad in the world. The policy of the Government, the policy of the Church, and the policy of all great organisations is prostituted to suit the juvenility of the age. Let us remember that we have masters of old to look back upon, and that we are the masters of the present, and let each pharmaceutical chemist—never mind those who will not come in unless you wheedle them—determine that as long as they are at the post of duty they will never encourage by their actions or their words any juvenile element that is inimical to the constitution of the Pharmaceutical Society and its aims for the benefit of chemists and druggists all round.

The President: If there are no further remarks I would just reply to one or two of the criticisms made on the report and on the action of the Council. Perhaps I may say a word or two with reference to the observations of Mr. Wright. Mr. Wright has expressed himself rather strongly, and seems to think that the *Pharmaceutical Journal* ought to be sent out at a considerable cost to the Society. There may be something, of course, in what he says, but after all I think we have a right to look at it from a business point of view, and I am not one of those who think we ought to have the large adverse balance-sheet we have at the present time, because I am firmly of opinion that if properly arranged and managed it ought to cost the Society a great deal less than it does. But I would like to say this—I want the members of the Society to trust the Council to manage the *Pharmaceutical Journal*. We are all as anxious as we possibly can be to do the very best we can for the Society. I said in my remarks in moving the adoption of the report in reference to the Journal that the Council had had under very careful consideration the points mentioned by Mr. Wright this morning. We desire to look at the matter all round, and I think when we have considered it fully the members of the Society will have nothing to regret in the action of the Council. Mr. Campkin referred to the ten thousand people outside as well as our own members who appeared to want more information than they get at the present time. He held this, that if we were to place more confidence in our people outside, and to give our confidence to people who do not belong to the Society then they would probably come in. I agree very largely with what Mr. Hyslop has said about it, and I do not think that those who do not belong to us have any very great cause to criticise us. It seems to me that we are trying to benefit in all sorts of ways the craft generally, and by that means, of course, we hope to get more members. This is a matter which my colleagues and I have spoken about time after time, and I have referred to it also this morning—that the members of the craft throughout the country owe a duty also to the Pharmaceutical Society—those who do not belong to it owe a duty to it because the Council through the Society is always doing something to improve the position of the craft. Unfortunately those ten thousand gentlemen do not appear to give us any credit for it, and if they do I certainly think they ought to come in. Then, gentlemen, Mr. Campkin has referred to the inaction or inactivity of the Council, and he appears, although he corrected himself afterwards, to show that the Council have done nothing since 1881, when that decision was given, to try and remedy the evil. I may remind him, and probably when he thinks about it he will know, that the Council have drafted a considerable number of Bills dealing with this very question. He told us that although at the present time the Government is the strongest Government which ever existed, yet it is the weakest; he also told us it was not much good going to the Government, and afterwards he said you must keep pegging away and go on. It is a little unsatisfactory if we are to take the advice of Mr. Campkin, who told us it was no use going to the present Government, to go again to the present Government. He ought, perhaps, to have said, stay your hands until you get a better Government; but we are not going to stay our hands. We are going to do our best to improve our present position. He also referred to the matter of local organisation, and I agree with him, and I am glad to have his remarks on that matter, because I think it is important that our own officers throughout the country should take not only the trouble to interview members of the craft, but they should also get thoroughly into touch with each member of Parliament of his division. I know Mr. Campkin has done a great deal of work in that direction, and I thank him for it. Then Mr. Campbell made some reference to Section 15 of the Pharmacy Act. He read that section, and also appeared to be of opinion that the Council had done nothing to put a stop to what he called illegal trading by limited companies, and so on. Of course, every member in this room has read, and very carefully studied, the draft Pharmacy Bill which we had in hand last year, and which is now in the hands of the Government Department. I think, probably, if he reads that Bill it will convince him that the Society is doing everything it can to prevent or to put on a proper footing this illegal trading, and it will enable him to find out who is carrying on these businesses, because in that Bill there is a clause which makes it compulsory on the proprietor of such a business to send to the Registrar the name of the person carrying on the business. It will do everything that Mr. Campbell wants, and, therefore, I hope he is satisfied the Council is doing its best in the direction which he mentioned. Mr. Pentney referred to the bills with regard to the law. We, acting under advice, used this form, which we have used for some years, and we think it is most satisfactory. It would not be desirable to enter into accounts for law costs; it would hardly be right to show the penalties we obtain or to go into minor detail. This is a matter that has been carefully considered by the Council from time to time, and on the whole we think it is better to show it in the form it is shown here. Mr. Pentney also referred to the Council. He did not say the Council was a fraud and a sham, but he said there were some people who thought so. Well, we cannot help it, gentlemen; we have been elected. I can speak for my colleagues, we are doing our very best for everyone. We feel as much as any man does the great competition and the difficulties everybody has to face, and you may take my word for it, we are doing our best. Mr. Hyslop referred to those who had advised the Council and were quite willing to give advice. We are exceedingly glad to have the advice and help of anyone connected with our body. But I may just say this: Whilst I and my colleagues feel highly honoured at the position we occupy as representing the members of the Society throughout the kingdom, I do not mind saying your Council works very hard indeed. I am not ashamed to say it, but I sometimes think that it is a little unfair that the Council should be expected to do all for the people who, although they send us their guineas, yet do not help us to carry on the work—they supply the means of carrying it on, but I do think we require just a little more sympathy or a little more flattery, if you like. At any rate, we want some more help, and what I say is this, that every individual member of the Society throughout the country ought, instead of expecting the Council to do all the work to say to himself, "Can I do some work to help on the Society? Am I doing my duty myself with reference to this?" Because, if a man will sit down and think over these matters, he will see he is not doing all he can for his own craft. I should like all those who hear my words, or, if they are reported, they will take my advice, and not expect the Council to do all the work, but that they themselves will try, not only to help the Council, but to help themselves at the same time.

The resolution that the annual report be received and adopted was then put and carried unanimously.

The **President**: The next business is the appointment of scrutineers. I will ask the Secretary to read out a list of names that have been suggested.

The **Secretary**: We have some gentlemen who have kindly volunteered, but we have not got enough, and I should like two or three others besides those I will read. It will be a great convenience for us all to-morrow. The gentlemen who have kindly volunteered are these:—Mr. J. W. Bowen, Mr. E. N. Butt, Mr. H. Cracknall, Mr. J. W. Douglas, Mr. H. Finnemore, Mr. A. W. Hanson, Mr. E. W. Hill, Mr. A. E. Hobbs, Mr. J. Holding, Mr. W. Murton Holmes, Mr. D. R. Jacks, Mr. R. H. Jones Mr. C. Morley, Mr. W. Pickard, Mr. G. S. Taylor, Mr. Warren, Mr. A. J. Wing, and Mr. J. H. Cuff.

Mr. **Campkin**: Mr. Terry Holloway, Lewisham Road.

The **Secretary**: Is Mr. Prior Robinson here now?

Mr. W. P. **Robinson**: Yes.

The **President**: Will you kindly put your name down? Is it your pleasure that those gentlemen act as scrutineers? (Agreed.) The scrutineers will be good enough to meet here at ten o'clock to-morrow. Now I have to call attention to the following Registers, which are placed before you by Act of Parliament:—Register of Members and Student Associates of the Society, Register of Pharmaceutical Chemists, Register of Assistants, Register of Apprentices and Students under the Act of 1852, Register of Chemists and Druggists under the Act of 1868. The following gentlemen have been nominated auditors for the ensuing year:—Mr. E. N. Butt, Mr. Charles Hodgkinson, Mr. F. H. Lescher, Mr. Charles Umney, and Mr. Francis Yates. Those five gentlemen are the number required, and therefore I declare that they are duly elected, and that this general meeting is adjourned.

Mr. **MacEwan**: Mr. President and Gentlemen,—Before we adjourn, I do not think that we private members can go away without expressing our heartiest thanks to the President for his services in the chair to-day. I know pretty well, almost as well as if I were a member of the Council myself, how hard these gentlemen work, and there is a great deal to be said for those latter words of the President with regard to the lack of sympathy among the members for the Council and the amount of work that they do. It so happens that the majority of the Council are men who are at the heads of important businesses, for of course it is the business man who always finds time to do something. But we do not appreciate the fact that these gentlemen give, not only their time, but the best of their brains, to further the work of the Society, and the least we can do, therefore, is to put on record a hearty vote of thanks for their services, and especially to the President, for his conduct in the chair to-day.

Mr. Feaver Clarke: Mr. President and Gentlemen,—I have very great pleasure in seconding that vote of thanks, and especially in endorsing the manner in which it is brought forward. I think if the private members would only realise the pleasure we derive from these meetings, we should not hear the tone which we do, unfortunately, about the Society up and down the country. To me it is always a pleasure to appear in this room at the annual meeting and realise the work that has been done for us by the members of the Council. I have, therefore, very great pleasure in seconding the vote of thanks to the President and to the Council.

The motion was put and carried unanimously.

The President: Mr. MacEwan, Mr. Clarke, and Gentlemen,—I thank you on behalf of myself and my colleagues for this resolution. I need hardly say we work very hard in your interests, and I need not say that it is very nice to have it recognised by a motion of this kind. On behalf of myself and the Council I again thank you very much. I now declare this meeting adjourned till three o'clock to-morrow to receive the report of the scrutineers. The ballot box is here, and if any member wishes to put in his paper, he must do so at once.

SPECIAL GENERAL MEETING.

The President then announced that the meeting was now open as a special general meeting, and he asked the Secretary to read the notice convening the meeting.

The Secretary read the notice convening the meeting.

The Bye-Laws.

The President: I beg to move, and it is seconded by the Vice-President, that the proposed new Bye-laws be taken as read. Is that your pleasure? To the contrary. Carried. The resolution which I have to move now is that the new Bye-laws made at the Council meeting on April 9, and confirmed on April 27, be now confirmed and approved. It is not necessary that I should go into them in any detail in moving this resolution, because I imagine that every member of the Society knows perfectly well what those Bye-laws are. They have been under consideration for a long time. They were approved some twelve months ago, but for certain reasons one of the clauses was objected to, and the Council asked permission to withdraw it from the Privy Council. Since then we have had them brought back and reconsidered them, and the Bye-laws which are before us now are the same in every respect with the exception of Clause 23, which is the one which was objected to. I do not know that I need read that Bye-law, for you know what it is; it is before you. Therefore, without further observation, I am prepared to move this resolution. But I may be allowed to say this, that if this meeting does not care or wish to take them in this form, or if any member would like to discuss them or wish them to be gone through *seriatim*, there is no objection whatever to doing so. Therefore if any member feels strongly about them and desires to discuss them he is at liberty to do so.

Mr. Carteighe: Mr. President and Gentlemen,—I have great pleasure in seconding the motion. Most of the members know that the real alteration that we bring before you, as distinct from the alterations that were brought before the meeting this day twelve months, is the reference to paragraph 23 on page 7. It has reference to an examination detail, a question of being absent, etc.; you do not want to be bothered about that. I should like to say one word with reference to it. A good deal of feeling occurred over this clause. The Council last year thought it was better to take a broad view of its regulations, and try and make one which would apply automatically and without friction to all cases. Our friends of the law thought differently, and a good deal of excitement was produced thereby; but the excitement produced was not worth the great amount of time it cost me and my colleagues in considering the question. I do not think it was worth the money expended by our friends. We cannot have the slightest objection to propose a bye-law which practically approves what I for one have always said—namely, that the Society had no desire to be unduly severe in point of money with regard to a candidate. These observations, you will notice, have very little to do with the actual clause, except that they are the justification for reverting to the *status quo ante*. Practically, the clause is the same as it was before, only it is made a little more clear than it was. So, as we proposed last year to alter that one, we are simply reverting to what it was before, and we define it in the way it has been defined in the Courts of Scotland, which ought to satisfy every Scottish member. I would also remind members that practically we are officially informed that the Privy Council is prepared to approve the other Bye-laws, and I am not prepared to say the Privy Council would not have approved the whole lot if we had pressed them. But I know those men, as you know. I consider I am a strong man, and belong to a strong Council, and if members of mine feel they have a grievance and I can remedy it, and it does not involve a question of principle, I have no objection to taking the Bye-laws, and I have no objection to the Council putting these Bye-laws off for a year and bringing them up before this meeting, as we are doing. That is exactly the position of affairs, and all I have said is we have to consider that Bye-law, and, seeing that it has not been altered materially from what it was before, but has been practically made an open one, and an easy one to meet the views of the objectors last year, I do not see any objection to its adoption.

The President: Any observations on this resolution? If not, is it your pleasure that it do pass. Contrary? Carried unanimously.

The Poison Regulations.

The President: The resolution I have now to move is that Clause 3 of the regulations for the keeping, dispensing, and selling of poisons within the meaning of the Pharmacy Act of 1868 made in accordance with Section 1 of that Act be amended by the deletion of the word "and" preceding the word "lotions," and that the words "and liquid disinfectants" be added immediately after the word "lotions." Perhaps I may just shortly explain what appears to be the necessity for an amendment of the regulations or an alteration in the regulations to this extent. Some months ago after carbolic acid became a poison within the meaning of the Pharmacy Act the medical officer of health for Sunderland drew the attention of the Local Government Board to the fact that carbolic acid and poisonous disinfectants were being sold in a very loose manner, and suggesting that some alteration should be made in the method of their distribution in the interests of the safety of the public. That communication was sent to us by the Local Government Board, and after full consideration there seemed to be some sort of notion that this thing applied not only to the distribution of poisons but to the sale. That was not so, and we pointed that out to the Local Government Board, who expressed themselves rather strongly and drew the attention of the Privy Council to this matter. The result was that the Council of the Society considered the question very carefully, and after a long discussion at several meetings they came to the conclusion that such words as these would get over the difficulty in the sale of liquid disinfectants. That being so, no doubt the Local Government Board and other public bodies would recommend as they have already done—that disinfectants and poisons of various kinds, when distributed by public bodies, should be sent out under such restrictions as are recommended under our present regulations. Of course, it does not appear to be a very big thing in itself, although it is really very far-reaching. This, no doubt, is the best way of getting over the difficulty, and I may say that I have reason to believe that the Privy Council will accept this amended regulation as satisfactory to them. Therefore, I now move the resolution which I have read.

Mr. Robinson: I have much pleasure in seconding it. It is quite evident that whatever we can do to preserve the public from accidents it is our duty to do, and by adding liquid disinfectants to the schedule which says that poisons shall be sent out under certain restrictions, we are proposing something which will commend itself generally.

Mr. Barnard: Would oilmen have to comply with this regulation as well as chemists and druggists as regards the non-poisonous disinfectants?

The President: No; this would only apply to the scheduled poisons.

Mr. Atkinson: You must affix to each bottle a notice of the contents and the words: "Not to be taken internally." May I take it that, for the purpose of that section the ordinary poison bottle, which has the word moulded on it, would meet the requirement?

The President: Yes; I should think so.

Mr. Carteighe: I do not know whether I am in order, but for the purposes of this section the words "not to be taken internally," of course, cover this particular regulation, but a man would not be relieved from the 17th Section all the same, and he would have to put "Poison" on it in selling the thing. For the purpose of the regulation I think it is right.

The President then moved that the following resolution be adopted:—

"That Clause 3 of the present regulations for the keeping, dispensing, and selling of poisons within the meaning of the Pharmacy Act of 1868, made in accordance with Section 1 of the Act, be rescinded, and that the following be substituted therefor: 'That in the dispensing and selling of poisons, all liniments, embrocations, lotions, and liquid disinfectants containing poison be sent out in bottles rendered distinguishable by touch from ordinary medicine bottles, and that there also be affixed to such bottles (in addition to the name of the article and to any particular instructions for its use) a label giving notice that the contents of the bottle are not to be taken internally.'"

The Vice-President seconded the motion, and the resolution was adopted unanimously.

The Presidential Chain of Office.

Mr. Carteighe: Gentlemen, before we adjourn I am sure we should desire to express to our President our congratulations upon the very handsome decoration in which he appears to us for the first time at an annual meeting. Although it is not strictly formal business, I am sure you will not mind me just saying for you how we all appreciate the personal worth of our President, and that we congratulate him upon being the first President to wear his chain of office.

The members having expressed approval of Mr. Carteighe's suggestion by acclamation,

The President said: I am much obliged to you, Mr. Carteighe, and to you, gentlemen, for your congratulations. I am bound to say I quite agree with him with reference to the wearing of the chain by the President of a great body like the Pharmaceutical Society. I am quite sure that it is the right thing, and I am rather inclined to think that it adds dignity to the presidential office. At all events, it is of value, I think, to this extent, that it calls attention to the body itself.

The special general meeting then terminated.

ADJOURNED ANNUAL MEETING.

Mr. G. T. W. Newsholme, President, in the Chair.

The adjourned meeting for receiving the report of the Scrutineers was held on Thursday, May 29.

The Chairman of the Scrutineers, Mr. E. N. Butt, read the following report:—

Scrutineers' Report.

We, the undersigned Scrutineers, appointed at the Sixty-first Annual General Meeting of the Pharmaceutical Society of Great Britain, do hereby certify that we have examined the voting papers committed to us, and report the following:—

Voting papers reported by the Secretary to have been issued		5,418
Voting papers received		2,573
Voting papers issued but not returned		2,875
Voting papers received		2,573
Voting papers disallowed:—		
Informal	19	
Received by post, too late	13	
		32
Voting papers registered		2,541

Glyn-Jones, William S.	2,256	Harrington, John F.	1,756
Harrison, John	1,985	Southall, Alfred	1,555
Carteighe, Michael	1,963	Campkin, Algernon S.	1,303
Young, John Rymer	1,911	Pickering, Charles Edward	822
Park, Charles James	1,834	Morrison, John Wm. T.	783

E. Northway Butt, Chairman.

Bowen, J. W.
Cracknell, H.
Cuff, J. H.
Douglas, J. W.
Finnemore, H.
Hanson, A. W.
Hill, E. W.
Hobbs, A. E.
Holding, J.
Holloway, Terry
Holmes, W. Murton
Jacks, D. R.
Jones, R. H.
Lenton, W. H.
Morley, C.
Pickard, W.
Robinson, W. Prior
Taylor, G. S.
Warren, W.
Wing, A. J.

The New Council.

The President, as Chairman of the meeting, then declared that the following gentlemen would constitute the Council for the ensuing year:—

Allen, Charles Bowen, 20, High Road, Kilburn, N.W.
Atkins, Samuel Ralph, Market Place, Salisbury.
Carteighe, Michael, 180, New Bond Street, W.
Cooper, Albert, 80, Gloucester Road, S.W.
Corder, Octavius, 31, London Street, Norwich.
Cross, William Gowen, 70, Mardol, Shrewsbury.
Gifford, Richard Lord, Salford Bridge, Blackburn.
Glyn-Jones, William Samuel, 159, East India Dock Road, E.
Harrington, John Frederic, 45, Kensington High Street, W.
Harrison, John, 33, Bridge Street, Sunderland.
Hills, Walter, 225, Oxford Street, W.
Newsholme, G. T. Wilkinson, 27, High Street, Sheffield.
Park, Charles James, 33, Mutley Plain, Plymouth.
Robinson, R. A., 195, Brompton Road, S.W.
Savory, Arthur Ledsam, 143, New Bond Street, W.
Southall, Alfred, 17, Bull Street, Birmingham.
Storrar, David, 223, High Street, Kirkcaldy.
Symes, Charles, 14, Hardman Street, Liverpool.
Taylor, John, 210, St. George's Road, Bolton.
Wootton, Alfred Charles, "Barrymore," Fallow Corner, N. Finchley.
Young, John Rymer, 40, Sankey Street, Warrington.

Mr. Carteighe moved that a hearty vote of thanks be accorded to the Scrutineers, and to Mr. Butt in particular, for their services. Some years ago very serious difficulties arose at times in scrutinising the votes, but it was gratifying to find that now the system which had been employed since Mr. Butt had conducted the scrutiny those difficulties were avoided, and the work was done in a most expeditious and satisfactory manner.

Mr. Peter Boa, Chairman of the North British Branch Executive, seconded the vote of thanks, which was then put by the President and carried unanimously.

Mr. Butt having replied, the proceedings terminated.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Act.

Camphorated Oil.

At the Glasgow Sheriff Criminal Court, on May 19, David Paterson Walker, chemist and druggist, 116, New City Road, Glasgow, was charged with having sold camphorated oil which was deficient in camphor to the extent of 11 per cent.

Defendant's agent tendered a plea of not guilty, and at the same time remarked that the deficiency appeared to him to be about 2½ instead of 11 per cent., the camphorated oil sold containing 18·88 per cent., instead of the requisite 21·45 per cent. The deficiency was therefore 2·57 per cent., and it was ridiculous to calculate it at 11 per cent.

Sheriff Fyfe remarked that on the face of it the deficiency seemed to be represented by the smaller figure.

Mr. George Neilson, who prosecuted, explained that the percentage was calculated upon the quantity of camphor that the oil ought to contain, that being the usual method in such cases.

Defendant's agent retorted that such a method was totally fallacious, especially in the case of camphorated oil, where such a deficiency might be accounted for by evaporation.

Mr. Neilson: 2·45 is 11 per cent. of 21·45.

Defendant's Agent: That is something like compound interest.

Mr. Neilson: That is the custom universally adopted.

Defendant's Agent: I am told by competent chemists that it is utterly ridiculous. And, moreover, is it worth while to fight for 2½ per cent.?

Mr. Neilson, addressing the Sheriff, said that there had been a good deal of complaint as to drugs not containing the necessary proportion of certain constituents. Where such was the case there was nothing for it but the proper enforcement of the Statute.

His Lordship remarked that the deficiency might easily be accounted for without deliberate intention to defraud.

Defendant's agent then indicated that he might advise his client to plead guilty if the prosecutor would agree to some modification of the expenses.

The Sheriff: I am afraid that is just what Mr. Neilson will not do.

Mr. Neilson pointed out that the expenses were made up of actual outlays.

Defendant's agent said he understood that the large wholesale houses put in more camphor, so as to allow for evaporation, but his client had only heard of that recently. For putting in a larger quantity of camphor, too, a person might run the risk of prosecution for having too little oil.

Sheriff Fyfe laughingly remarked that he did not think there was much chance of such a prosecution.

Defendant's agent further explained that his client had made up the camphorated oil according to the standard, but by being kept in the bottle and sold in pennyworths a certain proportion of the camphor had disappeared by evaporation.

Sheriff Fyfe: The 11 per cent.

Defendant's Agent: The 2½ per cent. It is ridiculous and preposterous to apply a percentage to a per cent. If the charge is to be in these terms I cannot advise my client to plead guilty.

Mr. Neilson: Then I cannot accept a qualified plea.

The Sheriff then fixed June 13, at 10 o'clock, as the diet for trial.

Camphorated Oil.

At the Glasgow Sheriff Criminal Court, on May 19, Dr. Robert D. Taylor, 74, Nelson Street, Tradeston, Glasgow, pleaded guilty to a charge of having sold camphorated oil which was deficient in camphor to the extent of 21 per cent. Accused explained that the oil had been made up by a dispenser, who had over-heated the phial and broken it, subsequently adding more olive oil to make up the bulk. The offence was simply the result of an accident.

Sheriff Fyfe said camphorated oil did not hurt anybody very much, and the charge really meant that there was 5 per cent. too little camphor in the oil.

The Clerk stated that the expenses amounted to £1 15s. 6d.

His Lordship imposed a nominal fine of 5s., with expenses, remarking that he had no doubt the offence arose from a mistake on the part of the assistant.

Pharmacy Act (Ireland), 1875.

On Friday, May 23, in the Northern Divisional Police Court, Dublin, Mr. Swifte gave his decision in the cases of the Pharmaceutical Society of Ireland *v.* Frederick William Sweny and the same Society *v.* John Adams, which had been heard on May 2 (see *P.J.*, *ante*, p. 400).

Mr. Swifte said he felt obliged to dismiss the summonses against Sweny, holding that in their first averment the Society did not charge any offence, and in their second that the charge was brought against the wrong defendant. He had had a good deal of doubt as to what he should do with respect to the costs. He thought the summonses were launched without sufficient care either as to the law or the facts, for there was enough of the latter to have put the complainants on inquiry. With a reasonably careful inspection of the premises, to say nothing of the powers given by Section 18 of the Amending Act of 1890, the inscription "F. W. Sweny and Co., Limited," might have been seen printed across the front of the premises, and it was actually on the bottle in which the prescription was made up, as it also was on a lamp over the door of the shop. On the other hand, the defendant seemed to have no merits. The formation and constitution of the company, though apparently regular, seemed a curious affair, and there could be no doubt that, as a matter of fact, the prescription was made up and sold by an unqualified person. On the whole, however, he had come to the conclusion to dismiss the summonses against Sweny without costs, and that order also applied to the summons against Adams.

Mr. O'Shaughnessy said Dr. McKenna never allowed Mr. Adams to make up any prescription except he was on the premises himself.

Mr. Swifte: I don't think it is of much use to have him on the premises. That is the reason why I am dismissing the summons against him without costs. I don't think Mr. Adams had any right to make up a prescription.

On the application of Mr. Clay, the hearing of summonses against two other defendants was adjourned to June 13.

Charge of Embezzlement.

At the South London Sessions, on May 23, Joseph Milne, 26, described as a chemist's manager, was charged with embezzling the money of his employers, Messrs. Lewis and Burrows, Limited, chemists, at their branch establishment, Lavender Hill, London, S.W. (see *P.J. ante*, pp. 425 and 443). The jury found the accused not guilty and he was discharged.

Agurine; Theobromine-Sodium Sodium Acetate.—This compound, which occurs in white hygroscopic crystals sparingly soluble in water, is stated to be preferable to diuretine as a diuretic, since not only is it free from salicylic acid, but also is claimed to exert a specific influence on the secretion of phosphates. It is given in daily doses of 3 to 8 grains, either suspended in a mucilaginous mixture, or in capsules.—*Pharm. Zeit.*, **47**, 181.

REVIEWS AND NOTICES OF BOOKS.

'The Medical Annual: A Year-Book of Treatment and Practitioner's Index.' Pp. 768. Price 7s. 6d. net. Bristol: John Wright and Co. 1902.

It is now twenty years since the 'Medical Annual' first made its appearance, with the object of enabling the over-worked medical practitioner to keep himself abreast of the knowledge of the times. That object has been well attained, and the practical value of the work has continued to increase year by year. The contributors to the present volume number thirty-seven, and their contributions deal with all that was new in medicine, surgery, etc., during the past year. Of especial interest are the dictionary of materia medica and therapeutics, and the articles on toxins and anti-toxins, arsenical poisoning, errors of refraction and accommodation, aseptic surgery in New York, new applications of formic aldehyde, X-rays, etc., etc. There are also useful summaries of the progress of sanitary science in 1901 and of legal decisions affecting the public health and the medical profession, together with the usual review of new inventions and pharmaceutical and dietetic articles.

'The War Against Consumption.' By Dennis Vinrace, M.R.C.S., L.S.A., revised by John H. Vinrace, M.B., M.R.C.P. Pp. 178. Price 2s. 6d. net. London: Century Printing Co., Ltd. 1901.

This is a popular handbook of the proceedings of the British Conference on Tuberculosis, held in London last year, published with the object of disseminating more accurate information concerning the present state of medical knowledge as to the origin and treatment of consumption, and more especially the means by which the spread of infection can be effectively checked. Beginning with a historical outline of the knowledge and treatment of phthisis, the author proceeds to deal in turn with the influence of heredity, infection from tuberculous sputum, the infectivity of dust, the influence of climate, and the various methods of preventive and remedial treatment. The opinions expressed in the more important papers contributed to the different Sections of the Conference are conveyed in popular language, so that the book is well adapted for the purpose of conveying to the public a correct knowledge of the causes of consumption and of the means by which it may be averted.

'Revue des Medicaments Nouveaux.' By C. Crinon. Ninth edition. Pp. 425. Price 4 francs. Paris: Rueff et Cie. 1902.

The useful purpose served by this little work is proved by its continued reappearance, year by year, after careful revision. The new edition contains particulars regarding new medicaments introduced during 1901, including acetopyrine, azurine, calcium and iron glycero-arseniates, guiacol camphorate, hermophenyl, honthin, iodipin, lecithin, purgatol, pyramidon camphorate, myoserum, tetranitrol, etc. The plan of the work remains unaltered, the essential facts regarding the properties and uses of the substances mentioned being stated as briefly as possible.

'Protoplasm: Its Origin, Varieties, and Functions.' By John W. Hayward, M.D. Pp. 51. Price 1s. 6d. net. Bristol: John Wright and Co. 1902.

Last year the author read an essay on the origin and nature of matter and force, life and mind, before the Birkenhead Literary and Scientific Society. That essay, having been subjected to revision, is now published in book form under the impression that it will prove of interest to scientific physicians generally, as it contains some original views on the origin, varieties, and functions of protoplasm.

'Chemicals for Photographic Purposes.' By E. Merck. Pp. 65. London: E. Merck, 16, Jewry Street, E.C. 1902.

In this booklet, the author states the most essential particulars regarding the more important chemicals employed in photography, and gives formulæ and directions for the application of developers, fixing baths, toning solutions, intensifiers, etc. A copy of the work will be sent free to any chemist on application.

'How to Make Ferrotypes and Glass Positives.' By An Old Expert. Fourth edition. Pp. 40. Price 6d., post free. London: Jonathan Fallowfield. 1902.

This is a concise guide to the processes of which it treats, and is particularly useful inasmuch as it contains complete instructions for working the wet collodion process. That process is far from being obsolete, and is likely to prove of increasing importance as time goes on.

'Malarial Fever: Its Cause, Prevention and Cure.' By Ronald Ross, F.R.C.S., D.P.H., F.R.S. Ninth edition. Pp. 68. Price 2s. 6d. London: Longmans, Green and Co. 1902.

The measures which experience has proved effective for the prevention and cure of malaria are here described for the information of individuals. The author first shows where the disease prevails, its symptoms, cause, and the manner in which it is communicated. A brief account of mosquitoes follows, with instructions how to get rid of those pests, and the rest of the book consists of two important chapters, dealing respectively with the prevention and treatment of malaria. As the author is probably the chief authority on those subjects, the information he conveys is particularly valuable and worthy of the greatest possible attention on the part of those who are directly interested in the matter.

'Science in the Daily Meal.' By Albert Broadbent, F.R.H.S. Third edition. Pp. 44. Price 6d. London: Thomas Burleigh, 376, Strand, W.C. 1902.

The author believes that the vegetable kingdom is capable of providing the means of maintaining the body in its state of highest physical development, and explains why he holds that belief. He also gives a hundred so-called "uric acid-free" recipes, which may prove as useful to housekeepers who are not convinced of the harmfulness of animal food as to those who are.

'Die mikroskopische Analyse der Drogenpulver.' By Dr. Ludwig Koch. Vol. 2, part 2. Pp. 50, with 5 plates. Price 3 mk. 50pf. Leipzig: Gebrüder Borntraeger. 1902.

The second part of the second volume of Dr. Koch's "Microscopical Analysis of Powdered Drugs" commences with a description of the remaining rhizomes—viz., white hellebore, zedoary and ginger. To facilitate the identification of the powder of any rhizome official in the German Pharmacopœia, the author appends a key in which these are tabulated according to the characters they exhibit, primarily according to the average size of the starch grains. The rhizomes concluded, the author passes to the consideration of the tubers, and prefaces the detailed account of each by a discussion of the general structural characters of this class of drugs. In this discussion he makes some interesting observations on the variation in the amount of ash yielded by powdered drugs. That this variation is considerable for one and the same drug is well known. Glaser has pointed out that the fine powder sifted from coarsely-powdered drugs (as in some cases directed by the German Pharmacopœia) would contain a large proportion of calcium oxalate if that substance be present, and hence yield an abnormally high ash. This abnormal fine powder, if added to a normal powder, would increase its yield of ash. Koch is inclined to ascribe variation in the ash yield to a partial separation into portions of higher and lower ash-yield during the operations of grinding and sifting and neglect of the precaution to mix these powders thoroughly before selling them. The plates that accompany this part are as excellent as those that have preceded it; one could, however, suggest that a darker ink be used, and less repetition of cells or their constituents be made.

'Die Rohstoffe des Pflanzenreiches.' By Dr. Julius Wiesner. Part 8. Pp. 321 to 480. Price 5 marks. Leipzig: Wilhelm Engelmann. 1902.

This part of Professor Wiesner's valuable work is a continuation from Part 7 of the description of the various fibres that are used both for textile and other purposes such as paper-making. The material dealt with is very large and a comprehensive survey is afforded of all commercial fibres, including many of recent introduction and less extensively employed.

'Contributions to Practical Medicine.' By Sir James Sawyer. M.D., F.R.C.P. Third Edition. Pp. 209. Price 2s. 6d. net. Birmingham: Cornish Brothers. 1902.

This collection of clinical lectures deals with a wide range of matters pertaining to everyday medical practice, such as insomnia, the clinical examination of the thorax, constipation, etc. The spirit in which the subjects are approached is an eminently practical one, and the manner and style in which the writer's thoughts are expressed are clear and anything but dull. The colloquial character of clinical lectures makes it unnecessary to be very closely critical of the reasoning: such writings are in a measure *obiter dicta*, for which the author is not absolutely responsible, and so long as the right lesson is taught. It would not be difficult to object to some of the biological points involved in the following passage: "Sleep is a function of life, and life is a function of sleep, in man, in the animals which are a little lower than he is, in some sort in plants, in everything which lives. The living organism which cannot sleep cannot live. For all beings endowed with the crowning mercy of consciousness sleep is a pleasure as well as an appetite, and it is a necessity as well as both. For these conscious beings, strung as they are in their sentience to the most exquisite responses in the world's vast chorus of living harmonies, sleep is indeed and in truth 'tired Nature's sweet restorer.' For man, at the head of such beings, and perhaps the only one of them which knows the cark of a mind's unrepose, or the wear of 'that unrest which men miscall delight,' sleep it is indeed which smoothes out life's fretting creases and 'knits up the ravelled sleeve of care.'" Yet this passage forms an excellent exordium to the subject to which it calls attention. As to the treatment of insomnia, the author is most instructive and helpful. No "rule of thumb" is to be thought of, but the rational process of first seeking the cause and proceeding in accordance with the knowledge so gained is to be followed in each case. In treating of gastralgia the following useful and cautious attitude is recommended:—"I call a case one of gastralgia in which pain, deep-seated and paroxysmal, in or about the stomach, of a neuraglic or quasi-neuralgic character, is the leading symptom. But this statement is inseparable from the following important qualification: Pain of the character and position described can only be regarded as that of gastralgia when it is unaccompanied by marked evidences of gastric or gastro-hepatic catarrh, and when, also, it is wholly unaccompanied by physical signs of structural disease, either in the stomach or in its neighbourhood." This series of lectures constitutes a valuable addition to the library of the medical practitioner.

'Flora von Deutschland, Oesterreich, und der Schweiz.' Kryptogamen, Flora, Moose, etc. Funfter Bd., Lief. 2, 3, 4.

Parts 2, 3, and 4 of this excellent publication contain a continuation of the mosses of Germany, Austria, and Switzerland; part 2 including the *Andrœaceœ* and the numerous small groups formerly included under the *Phascacœ*, but here arranged under *Voitiaceœ*, *Physcomitrellaceœ*, *Bruchiaceœ*, *Ephemeraceœ*, and *Phascaceœ*; also *Weissiaceœ*, *Rhabdoweissiaceœ*, *Angstromiaceœ*, and *Dicranaceœ*. The last-named is continued in part 3, which also includes *Leucobryaceœ*, *Fissidentaceœ*, *Seligeriaceœ*, *Campylosteliaceœ*, *Ditrichaceœ*, and *Pottiaceœ*. Part 4 contains the remainder of the *Pottiaceœ*, and the commencement of the *Grimminaceœ*. The very practical character of the work commends it to any student of the mosses who can read German, and who desires to know which of the European species are likely to be discovered in our own country. The details given as to the size of the plants, their distinctive characters, and the altitude and soil on which they occur, and their time of fruiting, are all useful to the field botanist. There is perhaps a tendency to increase too much the number of families, instead of including many of them as tribes under the larger families, but in any case their microscopic characters are well defined. The families named *Bruchiaceœ*, *Physcomitrellaceœ*, *Ephemeraceœ*, and *Phascaceœ* are so closely allied in habit and leaf structure respectively to the *Dicranaceœ*, *Fumariaceœ* and *Pottiaceœ* that it is to be regretted they are not placed as tribes under them, as is done in Braithwaite's 'British Moss Flora,' and by other British bryologists. For the beginner in bryology there is doubtless some advantage in the author's method, but when once the characters of the larger families are known this differentation is rather a disadvantage than otherwise. But for cheapness and usefulness there is no British work on mosses that can compare with this publication.

'Peru: History of Coca.' By W. Golden Mortimer, M.D. Pp. 576. Price $5.0. New York: J. H. Vail and Company. 1901.

The author has written a very interesting and elaborate, if somewhat diffuse, account of the associations and uses of coca from the times of the Incas to the present day. The history of coca is the history of the Incas, who regarded it as "the divine plant" on account of its property of imparting endurance, and the story of these remarkable people is set out in detail, with descriptions of their industries, science, arts, poetry, social system, and religious rites. Coca appears to have become a necessity to the Andean Indians, the descendants of the Incas. The Indians use daily one or two ounces of leaves, which have been dried and cured like tobacco, mixed with the ashes of certain plants or of shells, or with limestone, and the more work to be done the more coca is stipulated for and consumed. In fact, they regulate the distance to be travelled by the time a chew of coca will last, which is generally three-quarters of a league, or forty minutes. The author is a firm believer in the virtues of coca as distinct from cocaine, and asserts that "the ideas of moral depravity and the fears of debasing habit following the use of coca have sprung from false premises and early misconceptions as to the true nature of the plant. As a matter of fact, neither 'habit,' as that is understood, nor poisoning, has ever been recorded against coca among the natives, where it has been continued in use for centuries." As regards the "cocaine habit," the author has personally investigated alleged cases, and in every instance he has found that it was a condition engrafted upon some previous "habit" in a nervous subject or else the report was absolutely false. Indeed, coca is alleged to be Nature's best gift to man, and is as innocent as tea or coffee, but vastly superior and more worthy of general use. Cocaine, it is claimed, is not a measure of the value of coca. The natives use the Truxillo or narrow-leaf coca, which is said to be richest in "aromatic principles," in preference to the Bolivian leaf, which contains more cocaine. If the virtues of the leaf be not due to the cocaine, it must be admitted that very little is known of the so-called aromatic principles. The action of coca and cocaine differ, inasmuch as while each gives a peculiar sense of well-being, cocaine affects the nervous system more than coca—not because it is coca in a concentrated form, but because of the absence of the modifying substances which exist in coca. Such are the author's opinions on this important subject. The various authorities on the alkaloids of coca have been consulted, and their results are clearly and accurately stated; also chapters are devoted to the production of alkaloids in plants, the influence of coca on muscular energy and on the nervous system, its adaptation to voice production, its dietetic influence, etc., as well as collective investigations on its physiological and therapeutic action from 369 medical correspondents. The book is well printed and profusely illustrated, and altogether it serves as a useful contribution to the subject of coca, concerning the virtues of which the author is evidently an enthusiast.

'A Textbook of Elementary Botany.' By Charlotte L. Laurie, with illustrations by W. L. Boys Smith. Pp. 142. Price 2s. 6d. London: Allman and Son, Ltd. 1902.

The authoress of this little work is assistant mistress at Cheltenham Ladies' College, and the book is intended especially for those preparing for the Junior Oxford and Cambridge examinations. In order that it may also interest beginners in the study of botany, technical language is avoided as much as possible. It is divided into three parts, the first treating of the structure and growth of the flowering plant; the second of the classification, distribution, and habitat of flowering plants and the characteristics of a few orders; while the third deals with the physiology of the plant. The first part is very clearly written. The explanations, given in a concise but readable style, with the help of admirable illustrations by Miss W. L. Boys-Smith, the science lecturer at the same college, cannot fail to be understood even by the dullest scholar. The only drawback noticeable is that English names are often given for plants without their botanical equivalents; thus on page 8 it is stated, "Comparing the germination of the sunflower with that of the bean, there is this difference to note: The two cotyledons do not remain in the ground as they do in the bean, but are borne upwards." That is true of some beans, but not of all, and the particular bean referred to can only be guessed from the description on p. 1, where the words "brown coat" give the only clue. The same difficulty occurs with "Scirpus," on p. 21. The chapters on flower and inflorescence are excellent, but that on fruits it not quite so happily expressed; thus on p. 65 it is stated that "the fruit can only be compound when the carpels have not united," and the distinction between nut and achene is given thus: They are both one-seeded, but differ in the structure of the wall; that of the nut is very hard, that of the achene much less so." In the chapter on classification there is an excellent table of the generic characters of the genera of Rosaceæ (p. 86), which cannot fail to be useful to students learning the order. There is, however, a curious slip of the pen on the previous page, where it is stated concerning the dog rose, "The receptacle does not drop off after pollination." Another occurs on p. 76, where "Rue" is mentioned as one of the local plants of the Ranunculaceæ, meadow rue being evidently intended. But these few slips by no means interfere with the usefulness of the little book for beginners, the excellent illustrations throughout the book alone making it worth the small sum at which it is published.

'The Lens: A Practical Guide to the Choice, Use, and Testing of Photographic Objectives.' By Messrs. T. Bolas, F.C.S., F.I.C., and G. E. Brown, F.I.C. Pp. 176. Price 2s. 6d net. London: Dawbarn and Ward, Ltd. 1902.

This work, recently published by Messrs. Dawbarn and Ward for the Photogram, Ltd., deals with the subject in a very lucid and practical manner, without recourse to mathematical formulæ. The first few chapters are devoted to an explanation of the principles of construction and properties of the various forms of lenses, the remaining portions of the book treating of their practical uses. The modern forms of anastigmats are included in the scope of the work, and the illustrations and diagrams are appropriate and clearly illustrative. The eighth chapter, on "Lenses, past and present, and their properties from the user's point of view," is especially of practical value, and the book, which may certainly be regarded as supplying a want, we can cordially recommend to those of our readers interested in photographic matters who desire a more than merely superficial acquaintance with the apparatus they use or deal in, but who have not time to acquire it from more extended and abstruse works.

FORMULÆ WHICH HAVE BEEN PROVED.*

The following formulæ are for preparation which B. S. Cooban, an American pharmacist, has used with satisfactory results.

Cold Cream.

White wax	¼ ounce
Spermaceti	2½ ounces
Oil of sweet almonds	2½ ounces

Melt, remove from the fire, and add

Rose water	1½ ounce

Beat until creamy, not until cold.

When the cream begins to thicken we add a few drops of oil of rose. Only the finest almond oil should be used, and one should be careful in his weighing of the wax and the spermaceti. These precautions will insure an elegant product.

Orange-Flower Skin Food.

White wax	½ ounce
Spermaceti	½ ounce
Coconut oil	1 ounce
Lanolin	1 ounce
Oil of sweet almonds	2 ounces

Melt in a porcelain dish, remove from the fire, and add

Orange-flower water	1 ounce
Tincture of benzoin	3 drops

Beat briskly until creamy.

This is an elegant preparation, and is used in massage for removing wrinkles.

Astringent Wash.

Cucumber juice	1½ ounce
Tincture of benzoin	½ ounce
Eau de Cologne	1 ounce
Elder-flower water	5 ounces

Put the tincture of benzoin in an eight-ounce bottle, add the other ingredients, previously mixed, and shake slightly. There will be some precipitation of benzoin in this mixture, but it will settle out, or it may be strained out through cheese-cloth.

This article is used to correct coarse pores, and to remedy an oily or flabby skin. Apply with a sponge night and morning.

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* From the *Bulletin of Pharmacy*.

Cucumber Juice.

Slice any convenient number of cucumbers, without peeling: place in porcelain kettle, and add just enough water to keep from burning. Cook until pulpy, and strain with force through muslin. This preparation may be preserved by the addition of boric or salicylic acid.

Ready Liniment.

Water of ammonia	1 drachm
Chloroform	1 drachm
Ether	½ fl. ounce
Oil of cloves	2 drachms
Oil of sassafras	1 ounce
Oil of turpentine	½ ounce
Camphor gum	2 drachms
Alcohol	14 fl. ounces

Mix and put up in two-ounce green panels.

Label with directions, and place each bottle in a carton.

Beef, Iron, and Wine.

Extract of beef	512 grains
*Detannated sherry wine	26 ounces
Alcohol	4 ounces
Citrate of iron and ammonia	256 grains
Simple syrup	12 ounces
Tincture of fresh orange peel	2 ounces
Tincture of cardamom (comp.)	1 ounce
Citric acid	10 grains
Water … enough to make	4 pints

Let stand twenty-four hours, agitate frequently, and filter.

See that the orange is fresh.

Furniture Polish.

Linseed oil	20 ounces
Spirit of turpentine	12 ounces
Solution of antimony chloride	1 ounce
Vinegar	8 ounces
Wood alcohol	3 ounces
Camphor	½ ounce
Ammonium chloride	3 drachms

Dissolve the camphor in the spirits, and the ammonium chloride in the vinegar. Mix the other ingredients with this in the order given. Shake for some time to secure a smooth, creamy mixture.

Put up in six-ounce bottles, with appropriate labels.

Lightning Renovator.

Stronger ammonia water	1 ounce
†Tincture of green soap	3 ounces
Sodium carbonate	2 drachms
Sodium borate	2 drachms
Ether	1 ounce
Alcohol	1 ounce
Water … enough to make	2 pints

Dissolve the salts in a portion of the water, and add the ammonia water and tincture of soap; finally add the ether and alcohol mixed.

This removes stains from all kinds of woollen goods, brightens black cloth, renovates carpets, etc. Put up in ordinary six-ounce bottles.

Toothache Cure.

Chloral hydrate	1 av. ounce
Camphor	1 av. ounce
Chloroform	1 fl. ounce
Ether	1 fl. ounce
Oil of cloves	2 fl. ounces
Oil of peppermint	2 fl. ounces
Alcohol … enough to make	16 fl. ounces

Put up in two drachm square vials.

Liquid Tooth-Wash.

White Castile soap	1 ounce
Cologne spirits	6 ounces
Water	6 ounces
Glycerin	2 ounces
Oil of peppermint	20 minims
Oil of cloves	10 minims
Oil of cinnamon	20 minims
Oil of winter green	30 minims
Extract of vanilla	½ ounce

Dissolve the soap in the water by the aid of heat if necessary, and add glycerin and extract of vanilla. Dissolve the oils in Cologne spirits and add to the solution first formed. Then filter and colour red. Be sure the oils are fresh, and do not put in more than the quantities specified.

Corn Salve.

Salicylic acid	2 ounces
Ammonium chloride	2 ounces
Acetic acid	½ ounce
Lanolin	2 ounces
White wax	2 ounces
Lard … enough to make	1 pound

Mix the acid with the ammonium chloride, add the lanolin, and, lastly, the lard and wax previously melted. Mix thoroughly and pour into quarter-ounce tin boxes and allow to cool.

Carbolic Salve.

Petrolatum	16 ounces
Paraffin	1½ ounce
Camphor	1 ounce
Carbolic acid	240 grains
Oil of sassafras	30 minims

Rub the carbolic acid, camphor, and oil together until solution is effected. Add to the petrolatum and paraffin previously melted, and stir until cool.

This makes an excellent salve for general use. Put up in two-ounce tin boxes with label and carton.

COMMERCIAL INTELLIGENCE.*

A New Chemical Method of Hardening Armour-Plate.—According to the report of Consul Powell, an inventor of Philadelphia has recently taken out three patents for the manufacture and treatment of armour-plates. The system consists in slowly heating a steel plate to a bright red, then submerging it in a bath of hardening liquid, keeping it in the bath for a sufficient length of time to effect the hardening process, and maintaining the bath as nearly as practicable at a temperature of about 60° to 70° F., and then toughening the face of the hardened portion in surface-tempering, whereby an armour-plate of three different grades of steel may be obtained. Another method of manufacturing armour-faced plate hardened to any required depth consists in slowly heating a plate of low-grade or mild open-hearth steel containing from 20 to 50 per cent. of carbon, and alloyed with from 1½ to 5 per cent. of nickel, to a bright-red heat, submerging it when at this heat for a sufficient length of time to effect the hardening process in a bath of hardening liquid to a depth corresponding with the depth to which it is required to harden it, maintaining the bath during the process at as nearly as practicable a temperature of about 60° to 70° F. by cooling it, annealing the back portion of the plate by placing upon the back of the plate when so heated a plate heated to a greater heat, as a white heat, removing the plate from such bath, and then toughening the face of the hardened portion of the plate by surface-tempering.

The Formula for the Solutions used in the foregoing processes is a curious one, being as follows:—Sweet spirit of nitre, 3 ozs.; aqua ammonia, 3 ozs.; ammonium chloride, 6 ozs.; zinc sulphate, 3 ozs.; ground alum, 3 ozs.; glycerin, 8 ozs.; water, 1 gallon. Or sweet spirit of nitre, 3 ozs.; aqua ammonia, 3 ozs.; ammonium chloride, 6 ozs.; zinc sulphate, 3 ozs.; ground alum, 3 ozs.; glycerin, 8 ozs.; copper sulphate, 1 oz.; sodium nitrate, 1 oz.; water, 1 gallon. The method of preparing the solutions is described thus:—In mixing solutions for the treatment of steel, containing ground alum, zinc sulphate, water, glycerin, and other ingredients, first introduce the alum and zinc sulphate into the water, maintaining such mixture in a state of rest for approximately twelve hours, then add the glycerin and other ingredients, and maintain the solution in a state of rest for approximately twenty-four hours before using. The method of making a solution for the treatment of steel consists in first introducing 3 ozs. of ground alum and 3 ozs. of zinc sulphate into one gallon of water, maintaining such mixture in a state of rest for approximately twelve hours, then adding glycerin, 8 ozs.; ammonium chloride, 6 ozs.; aqua ammonia, 3 ozs.; and sweet spirit of nitre, 3 ozs. The inventor does not appear to appreciate the effect of high temperatures upon the ingredients of these solutions.

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*To the sherry wine, in order to detannate, add ½ ounce of hot sweet milk, shake, and filter.

†Green soap, 100; strong alcohol, 50; oil of lavender, 0·2.

* From Consular Reports and other official sources.

FORMOSAN GOVERNMENT MONOPOLIES.—Of the six staples of Formosan trade, *i.e.*, tea, opium, camphor, salt, sugar and rice, three—opium, camphor, and salt—have been monopolised by the Formosan Government-General, which now, according to the report of Consul Kenny (Tainan, South Formosa), derives three-fourths of its ordinary revenue from those sources. Formerly the trade in opium and camphor in the Tainan Consular district, Mr. Kenny states, was in the hands of the few foreign merchants at that port, and amounted, taking the average of four successive years before the Japanese occupation, to nearly £250,000 annually. Since the creation of the monopolies, the import and export of opium and camphor have been confined to the northern port and placed in the hands of an outside foreign firm. The merchants at Tainan have thus been deprived of two-thirds of their income, and only retain their part of the trade in sugar which, in its turn, is becoming for them a precarious means of livelihood. They are said to feel the hardship particularly in the case of the camphor trade, which was originated and developed in the district entirely by their capital and enterprise, and for the loss of which they have as yet received no equivalent.

THE OPIUM MONOPOLY, remarks Mr. Kenny, was established in 1897 in order to check, or, at least, control the habit amongst the natives. The habit, however, he states, appears to be spreading, the return of licensed smokers in the Tainan Consular district of South Formosa at the end of 1900 showing 67,391, as against 55,112 at the end of 1899, or an increase of over 22 per cent. during the year. The actual number of smokers is believed to be considerably larger, probably about 20 per cent., as smuggling is still extensively carried on, notwithstanding the vigilant watch kept by the Customs authorities. The average daily consumption per head is stated to be 2·1 drachms.

THE CAMPHOR MONOPOLY was created in 1899, with a view to the protection of the forests in the interior, which, it was said, were being wantonly destroyed by wasteful cutting; but, Mr. Kenny is of opinion, its effect will probably be to accelerate their destruction, owing to the increased output, and to the fact that the trees are situated in the savage districts which are practically outside the control of the Government. It is calculated, Mr. Kenny states, that the forests will last at least five years at the present rate of output; and the Government have planted extensively in the neighbourhood of the stills and along the lower hills on the western side.

THE ESTIMATED RECEIPTS AND EXPENDITURES on account of each of the three monopolies of the Formosan Government for the year 1901 show an estimated profit on opium of over 21 per cent., on camphor of nearly 62½ per cent., and on salt of 33⅔ per cent. The actual opium and camphor receipts during the year 1901, however, Mr. Kenny states, fell short of the estimates by about £300,000. In the case of camphor, the shortage, amounting to over £200,000, was caused by the competition of crude camphor manufactured in Japan, the production of which, stimulated by the high prices fixed by the Formosan Government-General for the sale of its camphor abroad, rose suddenly from an average of between 6,000 and 7,000 cwts. a year to 27,000 cwts. There being no restriction placed on the export of camphor from Japan, the Japanese producer was able to undersell Formosan camphor on foreign markets, thus injuriously affecting the Monopoly receipts. The Formosan Government-General is said to have made representations to the Central Government with a view to the Monopoly being extended to Japan proper, so as to include the Japanese production, and a Bill having this for its object will, it is said, be introduced in the Imperial Diet this session (1902). The provisions of the Bill, Mr. Kenny states, are, shortly, that the camphor industry in Japan shall be placed under the management of the Formosan Monopoly Bureau, the profits being rendered to the Central Government, and that all camphor shall be sold to the Branch Camphor Bureaux at Kobé and Nagasaki at the fixed price of about 50 yen (say £5 2s. 1d.) per picul (133⅓ lbs.). With the exception of a yearly production of about 6,000 cwts. in the Fohkien province, and a negligible quantity in Sumatra, the Bureau thus secures, practically, the complete control of the world's camphor. The price proposed to be paid to the Japanese producer is said to be more than double the average price paid to the native producer in Formosa (about £2 2s. 4d. per cwt.).

THE DECREASE IN THE FORMOSAN OPIUM RECEIPTS during 1901 is attributed, generally, to smuggling. During the first three months of the year there is said to have been a large increase, and during the next three months a sudden and marked decrease in the receipts as compared with the same months in the previous year. An agitation in the centre of the island, which was ostensibly of a religious character, is stated to have been partly responsible for the falling off in the receipts during the second quarter. An apparition of a Chinese deity was said to have warned the natives, through the medium of certain Buddhist priests, against the evils of opium-smoking, and to have indicated the waters of a certain spring as an infallible cure for the habit. The reflection of the face of the deity was supposed to appear in the water to persons who had faith, and a draught of one cupful to effect an immediate, complete cure. Large pilgrimages of the poorer natives, Mr. Kenny states, went from the Tainan Consular district to the shrine, and several persons returned to Tainan apparently cured of the craving. The movement was beginning to assume formidable dimensions, remarks Mr. Kenny, and it only ceased when it became known that most of the alleged cures had relapsed.

RECENT PATENTS.[*]

COMBINED PESTLE AND SUPPOSITORY AND TABLET MACHINE.

A pharmaceutical implement has been patented, having for its object the provision of a utensil for grinding and mixing any medicinal preparation in granular or powdered form within a mortar, and afterwards shaping the material into the form of a suppository or compressed tablet or tablet triturate for medicinal use. The pestle has a handle with a head at one end and a suppository chamber at the opposite end. After the ingredients have been mixed with the pestle end of the instrument it is inverted, a plunger is raised by the pressure of one of the fingers, and the instrument pressed downward into the mixture until the chamber is filled with the compressed material. On releasing the plunger the pellet is ejected by a partial rotary movement whereby the clogging of the orifice with loose material is avoided. (G. L. Allen, Bradford, county of Bradford, Pennsylvania, U.S.A. ; No. 12,641 of 1901.)

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[*] Abstracted from the *Illustrated Official Journal* (*Patents*) and from specifications furnished by the Patent Office. A copy of any original specification can be obtained from the Comptroller-General, Patent Office, 25, Southampton Buildings, Chancery Lane, W.C., by sending 8d. in stamps, or a Patents Form, Cl (which can be obtained at the principal Post Offices at the same price) and stating the number and year of the required specification.

A Lotion for External Use.

This lotion is prepared by mixing 2 oz. of concentrated solution of lead subacetate and 2 lb. of alum with two gallons of water. It is intended for the treatment of a variety of complaints, including scalds, burns, varicose veins, hydrophobia, inflammations of all kinds, piles, sprains, cuts, knocks, bruises, swellings, weak and inflamed eyes, and the stings and bites from venomous creatures, *e.g.*, serpents, mosquitoes, hornets. (D. K. Schuttyser, 27, Ranelagh Road, Paddington, W. ; No. 13,454 of 1901.)

Medicine for Curing Horses of Colic.

The following preparation has been patented for curing horses of colic:—Calomel, 5 Gm. ; tartarated antimony, 8 Gm. ; chloral hydrate, 10 Gm. ; rhubarb root, 20 Gm. ; valerian root, 20 Gm. ; althæa root, comminuted, 20 Gm. ; B.P. mucilage of acacia, 5 Gm. ; oils of tansy, caraway, peppermint, of each 20 drops ; olei petroselini, 20 drops. Of the various ingredients of the preparation the ethereal oils commence to act immediately after being administered, those of caraway and peppermint abating the strong generation of gas, the oil of tansy serving to kill the worms, while the oil of parsley aids in the urinal evacuation. The proportions of rhubarb and valerian have a soothing influence on the stomach, and the former is laxative while the latter removes pain. The laxative action is further aided by the calomel and tartarated antimony. Further means of killing pain are, first, the chloral hydrate, and, secondly, the mucilage which also acts as a binding medium. The powder is added to a suitable liquid, such as tea or water, or given in the form of a "pill stick." (Sigmund Metzner, Veterinary Surgeon, Kattowitz, Prussian Silesia, Germany ; No. 12,719 of 1901.)

Apparatus for Extracting Alkaloids and Oils from Vegetable Substances.

This apparatus is intended for extracting alkaloids and oils from vegetable substances by the action of a continuously circulating liquid hydrocarbon, and then separating the hydrocarbon from the alkaloids and oils by vaporisation. It consists of:—(1) A receptacle for holding the materials to be extracted, and for receiving the extracting liquid ; (2) a still for receiving the liquid when laden with the alkaloids or oils and for volatilising the liquid ; (3) means for leading the solvent back to the vessel containing the solid materials while it is in a volatilised condition ; (4) means for applying a cooling agent to the said receptacle for condensing the volatilised solvent while in contact with the materials. Certain other novel points are described in the specification. (Henry Froehling, 17, South Twelfth Street, Richmond, County of Henrico, Virginia, U.S.A. No. 14,507, of 1901.)

Manufacture of Sulphocyanides.

Sulphocyanides are prepared as bye-products in the manufacture of the pigment zinc sulphide by the following process:—Heat under pressure, and at a temperature not exceeding 150° C., carbon bisulphide with an ammoniacal solution of zinc oxide, agitating the mixture until the reaction is complete. This reaction is represented by the equation: $CS_2 + 2NH_3 + ZnO = ZnS + CNS{\cdot}NH_4 + H_2O$. (E. Beringer, 1A, Sophienstrasse, Charlottenburg, Berlin, Germany, through Abel and Imray, Birkbeck Bank Chambers, Southampton Buildings, London ; No. 11,108 of 1900.)

NOTTINGHAM AND NOTTS CHEMISTS' ASSOCIATION.

The annual meeting of this Association was held on Wednesday, May 28, at the Victoria Station Hotel, Nottingham, when there were present:—Mr. Richard FitzHugh, J.P., Messrs. T. Wilson, C. A. Bolton, F. R. Sergeant, A. Middleton, A. E. Beilby, R. H. Beverley, E. Gascoyne (Treasurer), J. Smith, A. Norweb, E. Turton, L. Lawrance, and A. Eberlin and W. Gill (Hon. Secretaries). On the motion of Mr. Gascoyne, Mr. Dennis, of Radford Road, was elected a member of the Association.

The Secretary's Report.

Mr. Eberlin read the annual report, which stated that the session which was now closing, although a comparatively quiet one, had nevertheless been useful, and the Council was pleased to report that the Association was in a stronger position now than it was a year ago. Last May there was a nominal membership of fifty-two full members and six associate members. During the year four full members and three associate members had been elected, increasing the total to sixty-five. The Register was now in process of revision, and it was expected that a few names would have to be erased owing to non-compliance with the rules relating to payment of annual subscriptions. At the conclusion of the last annual meeting Mr. FitzHugh was made the recipient of a small token of the esteem of the members and of their appreciation of his valuable services to the Association as its President during the past twenty-five years. The presentation was in the form of a silver salver, engraved with a suitable inscription, and the members were much gratified at thus having an opportunity of expressing their sense of gratitude to Mr. FitzHugh, who, on his part, greatly appreciated the gift and the good feeling which prompted it. After a reference to the work of the session, including the smoking concert, Mr. A. R. Bennett's paper on "Some Curious Points in the Laws Affecting Chemists," Mr. Beilby's lecture on "Old Belgian Cities," and the annual dinner, the report went on to say that the Council gladly noted that there appeared to be no falling off in the interest taken by the members in the work of the Association, in spite of its educational work among the young men having changed in character. This was very satisfactory, for there was much work that the Association could do in furthering the interests of the craft. This it did by fostering a spirit of brotherhood, and affording opportunities for the discussion of educational, legal, and commercial subjects of interest to pharmacists, and the Council sincerely hoped that the year to come would be even more successful than the one that was past.

On the motion of Mr. Beverley, seconded by Mr. Middleton, the report was adopted.

Financial Report.

Mr. Gascoyne submitted the treasurer's report, which showed that the income for the year, including a balance in hand at the beginning of the year of £1 5s. 10d., had been £24 2s. 10d., and the payments less by £2 19s. 8d. He was very happy to say that the receipts from members and associate members had exceeded those of last year by about £5. The income had been £4 12s. 6d. in excess of the liabilities of the year.—On the motion of Mr. Beilby, the report was adopted.

Election of Officers.

The election of officers was then proceeded with, the following receiving no counter nomination:—President, Mr. R. FitzHugh, J.P. ; Vice-President, Mr. T. Wilson ; Treasurer, Mr. E. Gascoyne ; and Hon. Secretaries, Messrs. A. Eberlin and W. Gill. The following were elected as the Council:—Messrs. A. E. Beilby, F. R. Sergeant, R. Beverley, C. A. Bolton, A. Middleton, J. Beachell, J. Smith, and J. T. Rayson.

It was decided to arrange the annual dinner next winter for the last week in November or the first in December, if possible.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

CULTIVATION OF PEPPERMINT. MM. Charabot and Hebert find that the addition of sodium chloride to soil in which peppermint (*Mentha piperita*) is cultivated has the effect of accentuating the increase in the percentage of organic matter in the plant, as well as the relative loss of water. At the same time, the sodium chloride favours esterification and impedes the transformation of menthol into menthone.—*Scientific and Industrial Bulletin*, No. 5, p. 3.

ARTEMISIN. A. Merck has isolated artemisin, $C_{15}H_{18}O_4$, from the mother liquors of the preparation of santonin. As will be seen from the above formula it differs from santonin, $C_{15}H_{18}O_3$, in containing one atom more oxygen. Bertolo, who has investigated the substance, describes it as occurring in coloured columnar crystals, melting at 200° C.; soluble in three parts of alcohol and in sixty parts of water. The crystals are coloured yellow by exposure to light more deeply than santonin. A 10 per cent. alcoholic solution has the rotation $[\alpha]_D = -84{\cdot}3^\circ$. It gives a carmine red colour with aqueous or alcoholic soda solution. It forms a sodium salt on prolonged boiling with sodium carbonate, and yields an oxime with hydroxylamine, and a hydrazone with phenyl-hydrazine. Like santonin, therefore, it probably contains a lactone group.—*Pharm. Centralh.*, **43**, 65.

CANE SUGAR IN PLANTS. The method suggested by Bourquelot of using invertase as a test for cane sugar has already been described (*P. J.* [4], **13**, 692). That writer gives further results of experiments on such various parts of plants as tropæolum seeds, pæony roots, colchicum bulbs, helianthus tubers, betula bark, etc., and finds that the amount of cane sugar concluded to be present by the invertase method agrees closely with the amount calculated by optical measurement, except in such a case as *Helianthus tuberosus*, when another sugar is present which is also capable of inversion. He also concludes that cane sugar always, or nearly always, accompanies food reserves, and that it is a sort of necessary principle to nutritive changes in all phases.—*Comp. rend.*, **134**, 718.

OPENING AND CLOSING OF TULIP FLOWERS. It has generally been said that the movements of the perianth leaves of the tulip are due to growth. Professor Farmer, F.R.S., shows that this explanation is hardly tenable, since a change from a cold to a warm room will cause closed flowers to expand, while a return to the cold air will produce closing. The movement is really due to the presence of special tissue on the outer face, towards the base of the perianth leaves. This tissue is similar to that found in the leaf of *Dionæa*, and has the power of rapidly increasing or decreasing the turgidity of its constituent cells, which consequently respond to change quicker than the adjacent tissues. To demonstrate the phenomenon, cut a fairly thick section down the median line of a petal of a young unopened flower. Place this in water to allow the cells to become turgid, when a movement takes place which is equivalent to closing. Then place in a fairly strong plasmolysing solution, about 4 per cent. KNO_3; a contrary movement will be observed which would cause the petals to open.—*The New Phytologist*, **1**, 3.

Vol. 68. (Fourth Series, Vol. 14.) No. 1667.

MARINE DENITRIFYING BACTERIA. The presence of bacteria in sea water has been established by the investigations of Beijerinck upon luminous bacteria, but the question whether denitrifying organisms occur in the sea with similar functions to those found in the soil has only lately received attention. By means of cultures in media supplied with nitrates or nitrites H. H. Gran has established the presence of about twenty species, of which three are especially active in causing denitrifying changes. These were either of the nature of reducing nitrates to nitrites, or nitrites to ammonia. The factors which regulate their action are the degree of temperature and the supply of oxygen and food. It was found that the energy of their action depends on the amount of carbohydrates present, and that mannite is the best form in which to supply these. Whether the organisms are capable of regulating nitrogen circulation in the open sea is doubtful, but it is quite possible that near the land where carbohydrates are available in quantity their action may be quite appreciable.—*Bergen's Museums*, Aarbog, **10**.

CHEMISTRY OF CINNAMON OIL. A recent investigation of the constituents of cinnamon oil has shown the presence of several compounds which have not hitherto been recorded as occurring in that oil. These comprise methyl-n-amyl ketone, $CH_3{\cdot}CO{\cdot}CH_2{\cdot}CH_2{\cdot}CH_2{\cdot}CH_2{\cdot}CH_3$; pinene, $C_{10}H_{16}$; cymene, $C_{10}H_{14}$; furfurol, $C_4H_3O{\cdot}CH_3$; benzaldehyde, $C_6H_5{\cdot}CHO$; nonyl aldehyde, $C_9H_{18}O$; cumic aldehyde, $C_{10}H_{12}O$; linalol, $C_{10}H_{18}O$; caryophyllene, $C_{15}H_{24}$, and probably hydrocinnammic aldehyde, $C_6H_5{\cdot}CH_2{\cdot}CH_2{\cdot}CHO$ and linalyl isobutyrate, $C_{10}H_{17}{\cdot}OCOC_3H_7$. In addition to these, cinnammic aldehyde, phellandrene and eugenol have previously been recorded as constituents of cinnamon oil.—*Schimmel's Report*, May, 1902, p. 14.

SUGAR IN URINE. When ortho-nitro-phenyl-propiolic acid is heated with grape sugar in the presence of soda, indigo blue is formed, and this reaction can be used for the detection of sugar in urine. Urine (10 to 15 drops, diluted with 10 C.c. water) is heated in a test-tube and the liquid boiled for 2 to 4 minutes. In the presence of grape sugar the liquid becomes green, then intensely blue. This reaction will detect 0·3 per cent. of grape sugar in the urine, and it is not influenced by many other bodies which would reduce Fehling's solution. Albumen, when present in considerable proportion, must be removed by treating the urine with common salt or chloroform before applying the test.—E. Merck's *Bericht*, 1901, 133.

CAFFEINE IODIDES. A. Faucon calls attention to the fact that all commercial combinations of caffeine and iodine are very unstable, although the compound generally supplied under that name, hydriodide of tetra-iodo-caffeine, $C_5O_2N_4(CH_3)_3HI_4{\cdot}HI$, is the most permanent of all, it always contains a considerable amount of free iodide. He suggests, therefore, that instead of prescribing caffeine iodide, physicians should employ an alkaline iodide and the free alkaloid. He points out that three classes of iodo-caffeine compounds are known:—(1) Simple caffeine hydriodide, $C_5O_2NH_4(CH_3)_3{\cdot}HI{\cdot}2H_2O$; (2) additive compounds, resulting in the addition of the halogen to the molecule by breaking down the double bonds of the dioxytrimethylpurine nucleus, such are di-iodo caffeine and tetra-iodo caffeine, which are only known as the hydriodides, $C_5O_2N_4(CH_3)_3HI_2HI$ and $C_5O_2N_4(CH_3)_3\ 3HI_4HI$; (3) substituted iodo caffeine, $C_5O_2N_4(CH_3)_3I$. All these are so readily decomposed that they are not suitable for medicinal use.—*Journ. Pharm. Chim.* [4], **15**, 370.

NOTES ON COMMERCIAL SAMPLES OF ETHYL BROMIDE.

BY J. P. GILMOUR.

During the past three years I have examined fifty samples of ethyl bromide for Dr. A. Brown Kelly, ear and throat specialist, Glasgow, who is publishing an account of over 1,100 cases in which he has used it successfully as an anæsthetic in minor nose and throat operations. The physical and chemical tests described below were at first applied solely for the practical purpose of ascertaining whether the specimens were devoid of volatile phosphorous and arsenium compounds or free bromine and hydrobromic acid, the presence of which would render ethyl bromide unfit for administration as an anæsthetic. So that it was not until it occurred to me recently that it might be of service to prepare a statement of my observations, that any determinations of specific gravity or boiling point, etc., were made.

HISTORY.

Bromethane, C_2H_5Br, was prepared for the first time in 1827 by Serullas, who distilled it from a mixture of clear phosphorus, bromine, and ethyl hydroxide. Personne improved on that process by substituting amorphous for waxy phosphorus, and other syntheses, such as that by the interaction of the phosphorus bromides with ethyl hydroxide, were subsequently devised.

The physiological properties of bromethane as an anæsthetic were discovered in 1851 by Thomas Nunneley, who anæsthetised dogs and cats with it, and, in 1851, Robin, who experimented with birds, reported to the French Academy that "Des oiseaux, plusiers fois mis en expérience, il y a quatre jours, sont maintenant pleins de vie. L'éther bromhydrique se présente donc jusqu'ici comme devant être mis au rang des meilleurs agents anæsthésiques par inspiration."

It was not until fourteen years later that Nunneley introduced it in his clinical practice at the Leeds Hospital. Since that time it has been used so extensively on the Continent that Gilles ("Ueber Bromoethylnarkose," *Berlin. Klin. Woch.*, February, 1892) records that it has been used in many thousands of cases with uniformly satisfactory results. In the United Kingdom, in consequence of the characteristic caution which the foreigner is apt to call insular conservatism, the medical profession has been very slow to recognise the merits of ethyl bromide as an anæsthetic for minor operations. But there are signs, as in Dr. Kelly's set of cases, that it will soon gain a wider vogue in this country. And as there is good reason to believe that the casualties and mischievous effects occasionally attributed to the anæsthetic, when not due to its misuse, are caused by its impurity, it is of the utmost importance that a chemically or physiologically pure and stable product should be readily available. At present, as will be shown later, not less than 60 per cent. of the commercial samples are quite unfit for use, either owing to crude and defective processes of manufacture or to neglect of simple precautions for preservation.

In order to establish these points it is necessary to consider: (1) The modes of preparation of ethyl bromide; (2) the distinctive characters given in the leading documentary authorities for the pure substance; (3) the impurities which are physiologically contra-indicated and their sources; and (4) the tests for essential impurities, and the reactions of the samples examined by the present writer.

(1) MODES OF PREPARATION.

Bromethane may be prepared (1) by the classical method of Serullas, as improved by Personne; (2) by the action of the bromides of phosphorus on ethyl hydroxide; (3) by the interaction of pure, concentrated hydrobromic acid and ethyl hydroxide; (4) by the replacement of the Na in sodium ethylate with bromine; (5) from a mixture of zinc, pure sulphuric acid, bromine, and ethyl hydroxide. (6) As one of the products of the action of aluminium bromide on ethylene, and (7) by the interaction between ethyl hydroxide, pure concentrated sulphuric acid, and potassium bromide. Five of these processes are of merely scientific or laboratory interest. The two commercial methods of manufacture are (1) and (7), which are represented respectively by the subjoined equations:—

(1) $3C_2H_5OH + P + 3Br = 3C_2H_5Br + H_3PO_3$.

(7) (*a*) $C_2H_5OH + H_2SO_4 = C_2H_5HSO_4 + H_2O$.

(*b*) $C_2H_5HSO_4 + KBr = C_2H_5Br + KHSO_4$.

It will suffice to give a general description of the *modus operandi* in each case. Serullas's method—10 Gm. red phosphorus and 60 Gm. absolute alcohol are placed in a flask, immersed in cold water, and 60 Gm. bromine added drop by drop. After the mixture has stood for several hours the flask is placed in a water-bath, and connected with a suitable condensing apparatus. A gentle heat is then applied and bromethane distils over. The crude distillate is then purified by washing with weak solution of caustic soda, followed by water alone, dehydrated with calcium chloride, and finally subjected to fractional distillation, the portion collected being that which passes over between 39° and 40° C.

French Codex (method of Yvon), alcohol, 70 Gm., is mixed with pure concentrated sulphuric acid, 120 Gm., and cooled. The mixture is then transferred to a retort, and powdered potassium bromide, 120 Gm., added little by little to avoid rise of temperature. The retort is joined up with a Liebig's condenser, and when the reaction in the cold has ceased the retort is set on a sand-bath and the contents maintained at 128° C. (125° C. Yvon) until distillation is complete. The distillate is washed first with a 5 per cent. solution of potassium carbonate, and afterwards with three or four times its volume of distilled water. The mixture is then left to separate, and the layer of ethyl bromide is drawn off by a separating funnel and dehydrated with calcium chloride. After an interval of a day one-tenth of its weight of ol. amygdalæ or olivæ is added to the dehydrated product, which is then cautiously distilled on a water-bath, all portions being rejected except those coming over between 38° and 40° C

Judging from the frequency with which phosphoretted hydrogen occurred in the specimens examined by me, the Serullas method of manufacture must be fairly common. Indeed, it is the process given by Martindale ('Extra Pharmacopœia'), but Squire rightly recommends the formula of the French Codex. The method of Serullas is condemned by Hager and all the leading Continental authorities, because it yields a tainted product, abounding in physiologically noxious constituents. Thus, Texier in his thesis, 'Sur un Nouveau Mode d'Administration du Bromure d'Ethyle en Oto-Rhinologie,' 1895 (pp. 20-21), says: "Le bromure s'obtient par l'action du brome, de l'acide bromhydrique et du bromure de phosphore sur l'alcool. Personne a remplacé le phosphore ordinaire par le phosphore rouge. Cette préparation donne un produit impur. Le procédé d'Yvon est le meilleur. Il doit etre préparé en décomposant l'alcool de vin par l'acide sulfurique pur, en presence du bromure de potassium." And E. Pouchin, 'Du Bromure d'Ethyle,' 1894, p. 8, is equally emphatic. "Le bromure d'éthyle employé en synthèse organique est obtenu en chauffant l'alcool avec le bromure de phosphore. Ces produits sont à exclure de l'usage médical parce qu'ils contiennent des composés organiques sulfurés et arsénicaux. Au contraire le formule suivante ('Codex Français,' formulaire médical allemand) donne un bon produit."

DISTINCTIVE CHARACTERS.

Even the leading English authorities, such as Watts' 'Dictionary of Chemistry,' give a meagre and unsatisfactory description of the properties of bromethane, and if tests are specified at all it is in the most perfunctory way. The French monographs just cited and Hager ('Handbuch der Pharmaceutischen Praxis') are more explicit and detailed in these respects, and have been laid under contribution for some of the following particulars:—

Pure ethyl bromide is a colourless, mobile, refractive liquid, having a sweetish, chloroform-like odour, and a taste at first nauseously sweet and afterwards burning. S.G. (?), B.P. (?). It ought to remain fluid at 0° C. (Distinction from the toxic ethylene bromide, which crystallises at that temperature.) It is sparingly soluble in water (1:120, Squire), and freely in alcohol, ether, chloroform, and fixed and essential oils. It is not readily inflammable, and burns with a green flame, diffusing a pungent acid odour (HBr). Air and light decompose it gradually with formation of free bromine and hydrobromic acid. It is then generally of a brown colour, and has an acid reaction. The same effects are produced by the presence of moisture.

The reason for inserting a note of interrogation after s.g. and b.p. will be explained by the following comparative statements of the values assigned to these constants by different chemists.

S.G. 1·47 (French Codex "probably correct," Squire 'Companion,' p. 65), 1·4735 (Hager 'Handbuch'), 1·453 (German Ph.), 1·445-1·450 ('Ph. Helvet.'), 1·419 (Martindale), 1·40 (Lowig), 1·4189 (Mendelejeff), 1·4555 (Wergmann), 1·38 to 1·39 (G. H. Buchheister, 'Drogisten Praxis').

B.P. 38·5° (Codex), 38°-40° (Ph. Germ.), 39° (Perkin and Kipping), 38·8° (Remsen, 1899), 38°-39° (Pouchin), 40·5° (Martindale).

Assuming the modes of determining the density to be uniform, and in one case only is it indicated that it was taken at 0° C., the figure then being 1·5733 (Pierre), these discrepancies are explicable only as due to the impurity of the substance, an inference which applies *à fortiori* to the discordant results as to the boiling point. Hager suggests that the differences in the density may be caused by the presence of small quantities of alcohol, but it is imperative that there should be a systematic research to ascertain the sources of the variation.

Physiological Prerequisites.

It seems to be established from clinical experimentation and practice that many of the untoward effects ascribed to the action of ethyl bromide are due to the use of samples contaminated either in the process of manufacture, or by decomposition products. The bodies found in tainted samples, which are physiologically contra-indicated, are: (1) free bromine, (2) hydrobromic acid, (3) ethylene and amyl compounds, (4) sulphur compounds, (5) volatile compounds of arsenium, and phosphorus.

Bromine and hydrobromic acid are generally decomposition products due to actinism or hydrolysis. The other compounds are derived from the materials used for the production of commercial ethyl bromide, and sometimes as a result of secondary reactions.

Sources of Impurity.

Of the two modes of production of the commercial article, that, according to the French Codex, is obviously to be preferred. All the materials for it can be procured easily in an approximately pure state, so that there is practically no risk of the formation of volatile compounds of arsenium and phosphorus, as in the Serullas process. There ought to be no great difficulty in obtaining pure sulphuric acid, but from the frequent occurrence of sulphur compounds in commercial samples, it would seem that the acid used must contain sulphites or selenium (?). Two points to which manufacturers ought to direct special attention are: (1) the thorough dehydration of the substance, and (2) its fractionation until a portion is obtained with a constant boiling point.

Preservation.

While ethyl bromide may be inherently unstable, it is probable that the difficulty of preserving many samples is due to their original impurity, and especially to inadequate dehydration. In the case of the comparatively pure substance the first essential is to exclude air and light. I have found that good samples keep indefinitely if stored in the dark in small amber-coloured, entirely filled and hermetically sealed flasks. French chemists recommend the addition of 1 per cent. to 2 per cent. of alcohol as a preservative. But in my experience this is not any appreciable improvement on the method of storage just described. Given the pure substance, there is no need for the dictum of despair of Texier, who writes: "Mais même ainsi ce liquide ne se conserve clinquement par que deux à trois semaines, et il est préférable d'employer un bromure fraichement préparé."

Specimens containing free bromine may be purified by washing with solution of caustic soda, and thereafter with water, then dehydrating with calcium chloride, and finally rectifying. This process, however, is too troublesome for practical purposes.

Tests.

In examining the fifty samples referred to me I employed the tests described in the French monographs.

(1) If equal volumes of ethyl bromide and distilled water are agitated together, there should be no volume alteration (alcohol), and the separated watery layer should not redden blue litmus paper nor give any precipitate with silver nitrate (absence of hydrobromic acid and bromide).

(2) Agitated with its own volume of pure concentrated sulphuric acid, no yellow or other coloration ought to appear, even after the lapse of an hour (absence of organic compounds of sulphur and ethylene and amyl compounds).

(3) If drops of the sample are allowed to fall gently into a layer of potassium iodide solution (1:5), the drops, on reaching the bottom of the vessel, should not have acquired a violet colour (absence of free bromine).

(4) (Described by Hager; not used by me.) On warming 1 C.c. ethyl bromide with three drops aniline and 2·0 C.c. alcoholic potash, no disagreeable smell of carbylamine should be evolved (chloroform).

The chief physical tests are volatilisation without residue, and the absence of a garlicky odour, "Une odeur alliacée," which indicates the presence of phosphorous compounds.

Report on Samples.

Of the fifty specimens to which all the foregoing tests except No. 4 were applied 30 = 60 per cent. were utterly unfit for anæsthetic purposes, owing to the presence of deleterious compounds. Of the set of 50, 25 = 50 per cent. contained free hydrobromic acid and 2 = 4 per cent. free bromine. 20 = 40 per cent. had a distinct garlicky odour (phosphoretted hydrogen), 40 = 80 per cent. when subjected to the sulphuric acid test developed the characteristic coloration due to sulphur, ethylene, and amyl compounds, and 10 = 20 per cent. showed the yellow colour said to indicate the presence of organic compounds of sulphur.

The only perfectly pure specimen in this series was of French origin, and came stored in small actinic glass, hermetically sealed flasks. Although theoretically the samples containing sulphur and other impurities should have been rejected, yet, as it was impossible to get any commercial product free from them, only the exceptionally bad samples were condemned. In the few cases in which the density was taken it fell much below that given by Hager and the German Pharmacopœia, one specimen being as low as 1·3254.

In conclusion I desire to express my warm acknowledgments to Dr. A. Brown Kelly for revising my statements as to the clinical history of bromide of ethyl, and to Mr. J. Lothian for bibliographical references supplied by him from his polyglot library.

VEGETABLE POWDERS AND THEIR DIAGNOSTIC CHARACTERS.

BY PROFESSOR HENRY G. GREENISH AND EUGÈNE COLLIN.

Section 4.—Flowers and Flowering Tops

(Concluded from page 413.)

Cusso Flowers.

The pistillate inflorescence of *Brayera anthelmintica*, Kunth (N.O. Rosaceæ).

This inflorescence consists of a panicle of shortly stalked, purplish-red flowers. Each flower bears on its pedicel two rounded bracts. The calyx consists of two whorls of greenish sepals, a caducous, white corolla, abortive stamens, and two monocarpellary ovaries enclosed in the tube of the calyx. After fertilisation the inner sepals bend over the young fruit and shrivel; the outer grow larger, and become deeply veined with purple, hence the pistillate inflorescence is characterised by its purplish-red colour. The branching floral axis is covered with shaggy brown hairs

The staminate flowers are distinguished by their greenish colour the outer sepals as well as the inner are small, and the calyx-tube encloses only a rudimentary ovary.

The organs of which the pistillate inflorescence consists are characterised by the presence of a great number of hairs, both simple and glandular. The former are always unicellular, long, and conical; their lumen is very narrow, or even linear, but is enlarged into a bulb-shaped cavity at the base. Three forms of glandular hairs are present. Some are small and unicellular, others are larger, oval and pluricellular, others again are very large, unicellular, and rounded; the latter are specially numerous on the sepals.

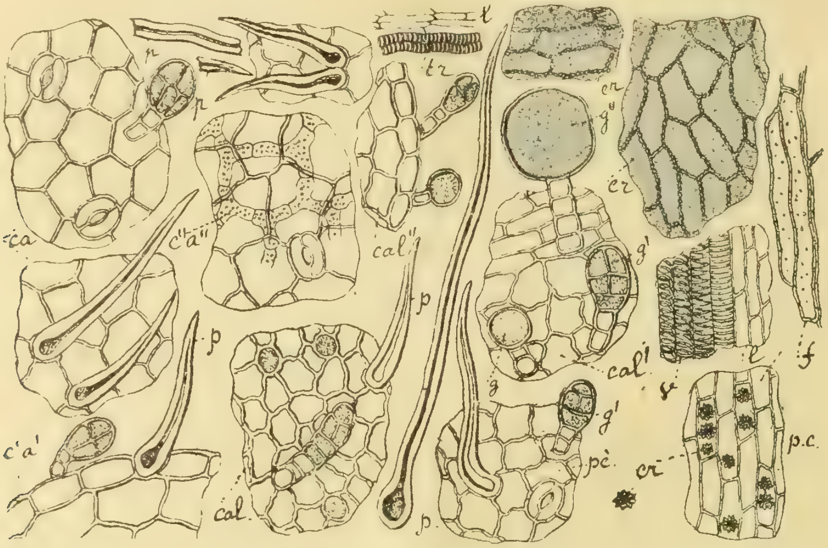

Fig. 52.—Cusso Flowers.

Powdered Cusso.—*ca*, epidermis of inner sepal; *c'a'*, margin of inner sepal; *c''a''*, epidermis of inner sepal, with fragment of mesophyll; *cal*, epidermis of outer sepal; *cal'*, the same with three forms of glandular hairs; *cal''*, margin of outer sepal; *cr*, rosette crystal of calcium oxalate; *er*, inner epidermis of calyx tube; *f*, lignified fibre; *g*, small unicellular gland; *g'*, pluricellular gland; *g''*, large unicellular gland from outer calyx; *l*, bast tissue; *p*, unicellular, simple, conical hairs, entire or broken, very numerous in this powder; *pc*, cortical parenchyma from floral axis, with numerous crystals; *pe*, epidermis of a petal; *tr*, vessels from the veins of flowers; *v*, vessels from floral axis.

The diagnostic characters of powdered cusso are:—(*a*) *the very abundant, long, unicellular hairs;* (*b*) *the characteristic glands, of which three varieties are to be found;* (*c*) *the parenchyma of the floral axis, rich in crystals.*

Indian Hemp.

The flowering tops of pistillate plants of *Cannabis sativa*, Linn. (N.O. Urticaceæ), cultivated in tropical districts of India.

In the flattened masses of which the drug consists, the following organs may be distinguished:—Stems, leafy bracts of a greyish-green colour, small bracteoles, filiform stigmas of a reddish-brown colour, and here and there fruits approaching maturity.

Stems.—The stems of the flowering tops are distinguished by long cystolithic hairs, and by the presence of numbers of rosette-crystals of calcium oxalate in the cortical parenchyma. The bast contains laticiferous vessels and tubular cells with calcium oxalate; the wood-parenchyma consists of polygonal cells with slightly thickened, pitted walls.

Leafy Bracts.—The upper epidermis is striated and furnished with very short, conical hairs which are inserted between the epidermal cells; the bases of these hairs are much enlarged, and contain cystoliths of considerable size. The lower epidermis smooth, and provided with stomata and with simple as well as glandular hairs. The stomata are very numerous; they are surrounded by five or six cells which exhibit little regularity in their arrangement. The hairs are most abundant over the veins; they are cystolithic, but are longer and much less enlarged at the base than those of the upper surface. The glands are large and sessile like those of labiate plants; they are divided by vertical walls into several cells. The veins are characterised by the presence in the bast of laticiferous vessels containing a brown latex.

Bracteoles.—These bear numerous glands, some of which are sessile, but others of which are supported upon long pluricellular and pluriserial stalks. Below the lower epidermis of the bracteoles there is a layer of cells, each of which contains a rosette of calcium oxalate.

Stigmata.—These are covered with long papillæ.

Fruits.—The presence of these in the powder is indicated by the large sclerenchymatous cells derived from the hard layer of the pericarp.

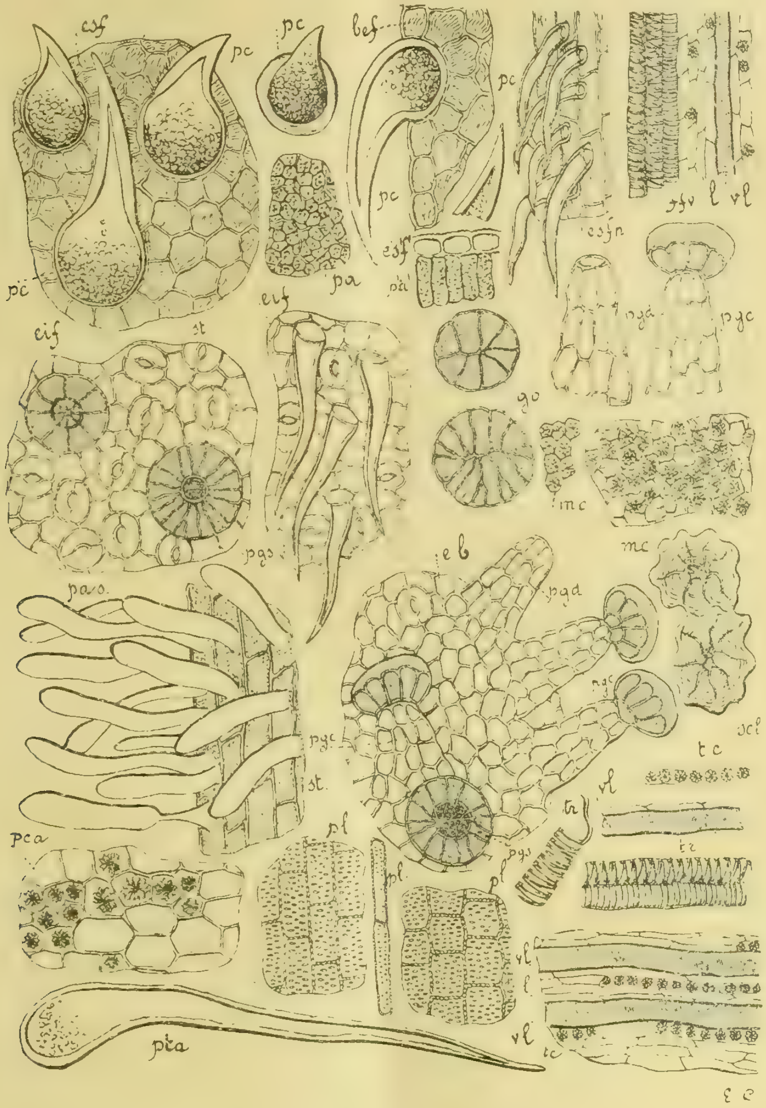

Fig. 53.—Indian Hemp.

Powdered Indian Hemp.—*bef*, epidermis from margin of bract; *eb*, epidermis of bracteole; *eif*, lower epidermis of bract; *esf*, upper epidermis; *e's'f'*, upper epidermis of bract, with palisade, *p'a'*, in profile; *esfn*, neural epidermis of bract; *ffv*, portion of fibro-vascular bundle from bract; *go*, oil gland; *l*, bast, rich in calcium oxalate; *mc*, mesophyll of bract, with crystals; *pa*, *p'a'*, palisade; *pas*, papillæ of stigma; *pc*, cystolithic hairs; *pca*, cortical parenchyma of stem with crystals; *pgc*, stalked glands; *pgd*, stalk deprived of gland; *pgs*, sessile glands; *pta*, simple hair from stem; *pl*, lignified parenchyma of stem; *st*, stigma with papillæ; *tc*, crystal tubes: *tr*, vessels; *vl*, laticiferous vessels.

The diagnostic characters of powdered Indian hemp are:—(*a*) *the remarkable curved hairs with cystoliths at their base;* (*b*) *the secreting glands and their pluricellular pedicels, often much broken;* (*c*) *fragments of parenchyma with numerous small rosettes of calcium oxalate;* (*d*) *laticiferous vessels of the bast with brownish, granular contents.*

Lily of the Valley.

The inflorescence of *Convallaria majalis,* Linn. (N.O. Liliaceæ).

The lily of the valley produces a graceful unilateral raceme of fragrant flowers with white campanulate corollas, each of which bears on its inner surface six stamens with large anthers. The ovary is trilocular, and is crowned with a short, thick style

The inner epidermis (*ei*) of the perianth is composed of polygonal cells with smooth cuticle, and is provided with stomata, each of which is surrounded by four or five cells.

The outer epidermis (*ee*) is striated, and consists of smaller cells. The parenchymatous tissue between these two layers is traversed by numerous fibro-vascular bundles, and contains aggregations of acicular crystals in some of the cells, which are distinguished from the neighbouring ones by their larger size.

The thecæ of the anthers are largely composed of spirally, thickened cells (*an*). The stigmas are covered with a striated cuticle, and provided with numerous papillæ.

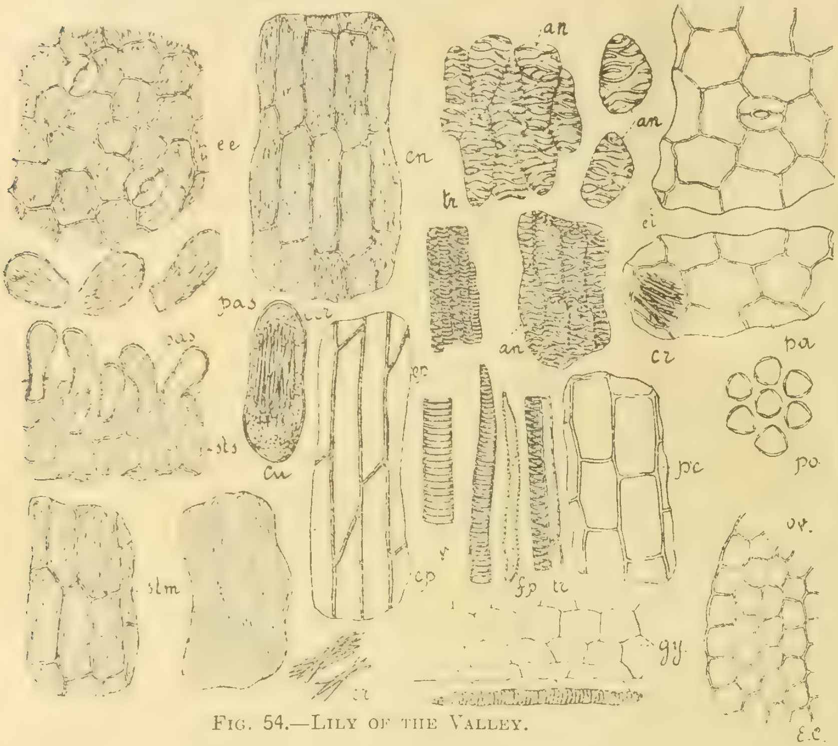

Fig. 54.—Lily of the Valley.

Powdered Lily of the Valley.—*an*, cells from the thecæ of anthers; *ccr*, crystal cells from perianth; *cr*, acicular crystals; *cu*, débris of cuticle; *ee*, outer epidermis of perianth; *ei*, inner epidermis of perianth; *en*, neural epidermis of perianth; *ep*, epidermis of peduncle; *fp*, pericyclic fibres; *gy*, débris of pistils; *ov*, débris of ovule; *pas*, papillæ from stigmata; *pa*, parenchyma from perianth; *pc*, cortical parenchyma of peduncle; *po*, pollen grains; *stm*, *sts*, striated epidermis of stigmas; *tr*, vessels from perianth; *v*, vessels from peduncle.

The powder of this flower contains in addition numerous débris derived from the peduncles, pistils, ovaries, etc., as well as vessels derived from the veins, acicular crystals of calcium oxalate and pollen grains.

The diagnostic characters of powdered lily of the valley flowers are:—(*a*) *cells from the perianth with acicular crystals;* (*b*) *striated surfaces of the stigmata and papillæ;* (*c*) *the epidermis of the peduncle with elongated cells;* (*d*) *the cells of the perianth, with acicular crystals of calcium oxalate.*

SAFFRON.

Saffron consists of the stigmas and upper parts of the styles of *Crocus sativus*, Linn. (N.O. Irideæ).

It forms a loosely matted mass of dark, reddish-brown flattened threads, amongst which a few narrower yellow ones can be distinguished. The upper, enlarged part of the flattened threads is the stigma of the flower, the lower narrower portion is the style.

The stigma is composed of polygonal or rounded, thin-walled, parenchymatous cells containing mucilage and an orange-red colouring matter, crocin (polychroite). This tissue is traversed by small fibro-vascular bundles, which appear rounded in transverse section. It is covered by a slightly thickened, easily detached cuticle, which on the upper surface of the stigma bears small protuberances (*pr.*). Near the apex the stigma is furnished with large papillæ. The yellowish lower part of the threads of saffron is provided with an epidermis consisting of slightly sinuous cells, and is traversed by a small fibro-vascular bundle.

The diagnostic characters of powdered saffron are:—(*a*) *the orange-red colouring matter in the cells; it is soluble in water, but insoluble in fixed oil;* (*b*) *the upper epidermis of the stigmata with small papillose protuberances;* (*c*) *the large pollen grains.*

SANTONICA.

The unexpanded capitula of *Artemisia maritima*, var. α-*Stechmanniana*, Besser (N.O. Compositæ).

The capitula are very small, being only about 2 Mm. long, elongated and ovoid in shape; their surface is shining and glabrous.

The involucre consists of about ten to fifteen imbricated bracts. The lower of these are ovate in outline, and smaller and more distant than the upper ones, which are elongated. They are furnished with a conspicuous keel, on each side of which numerous oil-glands can be seen. The young bracts bear a few colourless woolly hairs over the midrib, but these fall off towards maturity. The upper bracts enclose from three to five

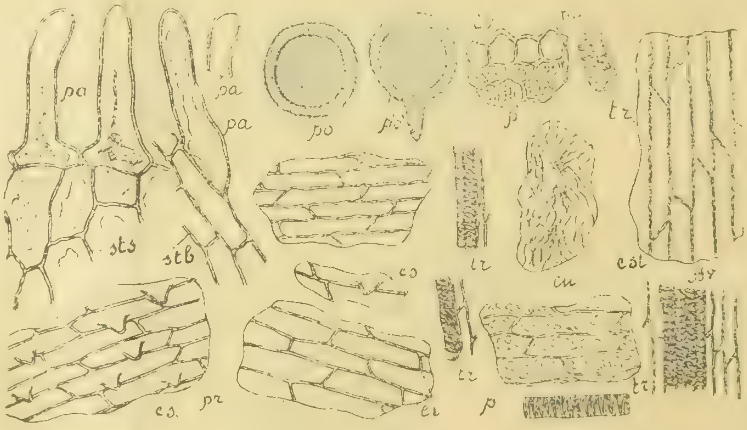

Fig. 55.—Saffron.

Powdered Saffron. *cu*, cuticle of stigma; *ei*, lower epidermis of stigma; *es*, *e's'*, upper epidermis of stigma; *est*, epidermis of style; *ffv*, fibro-vascular bundle of style; *p*, parenchyma of stigma; *p'*, transverse section of same; *pa*, papillæ at apex of stigma; *po*, pollen grains; *p'o'*, the same, with tube protruding; *pr*, warty projections on epidermis of stigma; *sts*, upper extremity of stigma, with papillæ; *stb*, upper margin of stigma; *tr*, vessels.

florets inserted upon a naked receptacle. The corolla of each floret is contracted at the base, and divides at the apex into five short triangular teeth.

The involucral bracts are composed of a central opaque portion bordered on each side by membranous translucent wings, on which numerous oil-glands are borne. The epidermis of the translucent portion consists of elongated cells, but that of the central portion is composed of isodiametric cells with pitted walls. The latter portion bears numerous stomata, glands, and one-celled woolly hairs; the glands have the shape and structure characteristic of composite plants.

The transverse section varies a little according to the position of the bract on the axis, but there are certain general characters common to all of them. The midrib is flat on the inner surface of the bract, but angular on the outer. The substance of the bract is composed of rounded, polygonal or cylindrical parenchymatous cells containing chlorophyll, and is traversed by a fibro-vascular bundle. Below the outer epidermis of the peripheral bracts there is a curved hypoderma consisting of one or two rows of sclerenchymatous cells. A secretory duct may sometimes, but not always be found within the endodermis, between the midrib and the epidermis of the upper (inner) surface of the bract.

The lower part of the corolla-tube bears a number of oil-glands; indeed this part of the plant appears to be richer in oil than any other.

The diagnostic characters of powdered santonica are:—(*a*) *the epidermis of the central portion of the bracts with pitted walls, numerous stomata, and woolly hairs*; (*b*) *the characteristic oil-glands*; (*c*) *the elongated, thickened cells of the hypoderma of the bracts.*

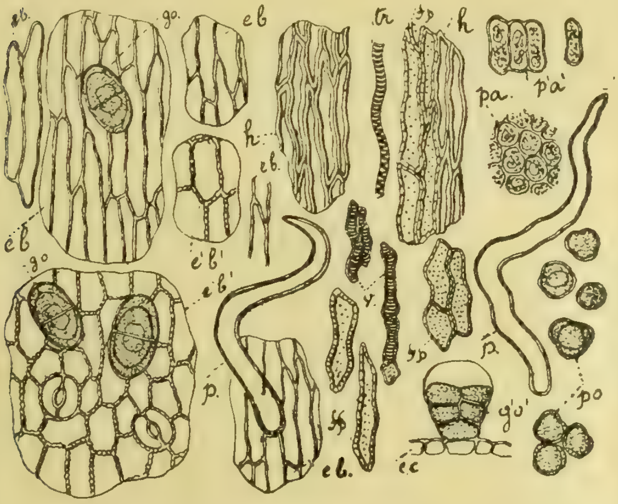

Fig. 56.—Santonica.

Powdered Santonica.—*eb*, epidermis of the membranous wings of the bracts; *e'b'*, epidermis of the central portion; *ec*, epidermis of the corolla tubes; *fp*, fibrous cells from pericycle; *go*, oil gland, surface view; *g'o'*, the same in profile; *h*, cells of the hypoderma; *p*, hairs from central portion of bract; *pa*, *p'a'*, parenchyma of the bracts; *po*, pollen grains; *st*, stomata; *tr*, *v*, elements of fibro-vascular bundle.

Petrolan in Skin Diseases.—Reiss endorses the favourable report of Frieser on the value of petrolan in the treatment of psoriasis, parasitic sycosis, chronic eczema and accidental burns. Havel also has compared the results obtained with petrolan with those obtained with naphthalan, finding the former drug to be equally efficacious, although much less costly.—*Therapist*, **12**, 9.

PRACTICAL NOTES AND FORMULÆ.

Magnesium Citrate Solution.

H. L. Sayre refers to the difficulty experienced in keeping this preparation; and states that if the solution is sterilised it will keep perfectly. He prepares it in the following manner:—magnesium carbonate, 6; citric acid, 12; water, *q.s.* ad 120. Heat gently until solution is effected, strain through cotton wool and measure into 12 oz. bottles, 10 oz. in each. Add to each bottle 2 oz. syrup of citric acid (U.S.P.) and shake. Insert tightly into the neck of each bottle a piece of absorbent cotton. Place bottles in a vessel with cover and add water until it reaches about three-fourths of the way to the top of the bottles: bring to the boil and maintain at that temperature for half-an-hour. The bottles may then be removed and stored. When dispensed, the cotton is removed, 40 grains of bicarbonate of potash added and the bottle properly corked.—*Western Druggist*, **24**, 10.

Copper in Powdered Drugs.

Referring to the question of the origin of small amounts of copper which have been detected from time to time in various powdered drugs and chemicals, E. H. Gane points out that traces of copper have been found by investigators in the ash of various drugs, and have been attributed to the absorption of copper by the plant from the soil, notwithstanding the fact that the place of growth may have been far removed from any known source of copper. That this is not the source of copper in all cases is shown by the fact that the metal could not be detected in the whole drug; and in the case of chemicals, the process of manufacture precluded copper contamination. Owing to the rejection of several consignments of ammonium carbonate which had developed a blue colour, the author undertook the investigation of the origin of the copper. He found that the source of the trouble was in the driving belts of the machinery, which are rivetted together by means of copper rivets, or stitched together with copper wire, and in the wear and tear minute particles, and sometimes fair-sized fragments of copper are thrown off. Replacing the leather belt by one of india-rubber has obviated further trouble.—*Journ. Soc. Chem. Ind.* **21**, 224.

Iodised Cotton.

E. Bourquelot gives the following method of manipulation for the production of iodised cotton wool, containing 4 per cent of available iodine, which has been adopted for inclusion in the forthcoming Codex. Raw carded cotton, dried at 30° C., 25 Gm. is evenly sprinkled with finely powdered iodine, 2 Gm., and introduced into a wide-mouthed glass-stoppered flask, which has previously been heated, while open, over boiling water, to drive out as much air as possible. After the introduction of the wool and iodine the stopper is immediately inserted and the flask plunged in boiling water, so as to immerse it wholly to the neck, or put in a steam chest at 100° C., and kept at that temperature for two hours. It is then cooled and the iodised cotton thus prepared stored in stoppered bottles. Thus kept it is stable, showing no diminution of the amount of available iodine in three months. The official requirements will demand at least 4 per cent. of available iodine in the wool. Attempts to increase this amount by using more iodine have not given satisfactory results. The total immersion of the flask is most important. Experiments show that when the containing vessel is only partially covered by the boiling water the amount of iodine adherent to the cotton falls considerably below the prescribed percentage.—*Journ. Pharm. Chim.* [6], **14**, 517.

Manipulative Improvement in Preparing Collodion.

E. Bourquelot points out that if gun cotton be first moistened with the prescribed quantity of alcohol, and the moist cotton be then treated with the requisite amount of ether, the solubility is much more rapid and uniform than if the nitro-cellulose be merely added to the previously mixed ether-alcohol solvent, as at present directed in the Codex (and in the B.P.). —*Journ. Pharm. Chim.* [6], **14**, 416.

LETTERS TO THE EDITOR.

Division of the Minor Examination.

In replying to Dr. Symes you say (*ante*, p. 440) "The mere fact of dividing the examination into two parts, without the simultaneous establishment of a compulsory curriculum, would be equivalent to a lowering of the standard by reducing its stringency." As one of those who have advocated the division of the Minor, I wish to enter a protest. The first purpose to be served by dividing the examination is to allow more time for the practical subjects, particularly more time for analytical work. The three hours at present available are quite insufficient to thoroughly test a candidate's knowledge. In the interesting article on "The Training of German Pharmacists" (*ante*, p. 432) your contributor does not state the time occupied by the practical work in the Apotheker examination. It would certainly require many more hours than are at present available in our Minor. No doubt the division of the examination would to some extent make the examinations a less severe strain upon the candidates, and that is a good and desirable object. No good purpose is achieved by making the examination what is called "stringent" or "difficult to pass." The object of our examinations is to ensure (so far as examinations may) that only properly equipped and qualified men shall enter the profession of pharmacy; not that the diploma should be reserved for a lesser number, who can more readily convert themselves into temporary encyclopedias of general knowledge.

Edinburgh, May 30, 1902. D. B. Dott.

I largely sympathise with Mr. Ingham (*ante*, p. 464) in his views as expressed in the first paragraph of his interesting letter. I can also bear witness to the accuracy of the facts as stated generally in the second; but with respect to his third and concluding paragraph, I think he puts forth conclusions as viewed through distorted media. I, too, possess examination certificates bearing honoured names in faded ink, Minor and Major, dated some few years before Mr. Ingham's (1864-1865). My curriculum as a student extended over about a dozen years before that, hovering about the portals of the Society, as if fearful to enter until competence could be proved whatever fiery trial might be awaiting it. Lured at last by one of those friendly sops for which the Society seems to have become notorious, or in some eyes infamous—in my case it was the special examination for men in business—I found, when upstairs at last, that instead of being amongst a lot of tigers, I was welcomed by a herd of industrious oxen, browsing away in the greenest of pastures amidst quiet streams of the cleanest water. Said I, "Come, give me more of this!" and they allowed me to come up for the veritable Major of that time; but that was not enough. I wish it had been harder.

I could add many more links to the pessimistic chain of facts fabricated by Mr. Ingham. Let one suffice now. The School Board for London is issuing tickets to the parents of children whose eyes are found to be the least deranged to notify the fact, and urge upon them the necessity of providing glasses without delay. On the back of each ticket is printed a special caution not to buy their spectacles at "toy shops or chemists," as otherwise they will be likely to obtain what is worse than useless. Is the Pharmaceutical Society to blame for this? Is it to blame for the fact that "three-fourths of the dispensing in many localities is still in the hands of the medical practitioner?" Or is it not the great body of chemists themselves who care only for "counter attractions," or of many of our own members of scant loyalty, who run shops with grand, attractive windows, but are within specimens of inattention to business, of dirtiness and disorder that would disgrace a common toy-shop? And is it likely, I oft ask myself, that our Society is going to risk money and reputation in the effort to maintain the pecuniary interests of those who will not help to improve themselves?

"Cash Drug Stores" will bring in the people if you do business in a busy avenue, people that for the most part you never expect to see again—but what sort of people? I meet with some who cannot afford five minutes to speak with me on the real interests of the craft, because they are pestered so with a stream of idlers asking, How much do you charge for so-and-so? and if you don't keep this, that, and the other which they once bought miles away and must have again? etc., etc. As to the "elastic conscience," pray and work for it by all means; it is the great need of the present day. People are accustomed to harden their conscience so much that all its lively elasticity is gone; it cannot answer to external influences; the love of industry, the cultivation of sympathy, the feeling of one's own responsibility in all the fresh surroundings of recurring daylight all seem deadened, petrified, as if the love of money had eaten out the vitals of assiduity, while self-assertion and greed had become the dominant factors in men's relations with each other. It is, I conceive, one great object of such an institution as ours to shelter and guard the development of the nobler instincts—*quæ prosunt omnibus*—and to redeem the actual pharmacist from the degrading trammels of promiscuous trade. Therefore from first to last it deserves of us all our warmest support.

Marylebone, N.W., June 3, 1902. J. C. Hyslop.

Allow me to remove a serious misapprehension of my meaning. You say I overlook the fact that candidates have previously spent several years in gaining a knowledge of practical pharmacy. That is quite a mistake. In all that I have said I have taken apprenticeship for granted. I do not for a moment suggest that candidates are to pass the science part of the Minor Examination before beginning apprenticeship. In using the word "curriculum" I apply it to a systematic course of instruction in a recognised school, or college, or university. I think that is the sense in which the word is intended to be used in all the discussions that have taken place in your columns, and it would only cause confusion to make it apply to apprenticeship. With this explanation I leave your readers to come to their own conclusions as to the practicability of my plan. As to the three years' practical training which you say should be insisted upon, I agree. But that should be three years between the registration as a student and entrance for the final qualifying examination. Could not this be very easily accomplished by a slight alteration of the regulations at present issued to students? On page 4 of the regulations it says:—

> "He . . will be required to produce . . a certified declaration that for three years he has been registered and employed as an apprentice or student, or has otherwise for three years been practically engaged in the translation and dispensing of prescriptions.

If the above were altered by merely omitting the latter part of the sentence it would ensure that the preliminary examination would be passed before the three years' practical experience began. That seems quite within the powers of the Council under the existing legislation. It is necessary to remember that as matter of fact a curriculum is universally undergone voluntarily by students at present. It is therefore not quite accurate to say that it is proposed to divide the examination without any curriculum. The recasting of the examination schedule has immensely improved the curriculum in all the schools, but progress is barred by the congested condition of the existing examination. Division would immediately remove this barrier and open the way for a reasonable course of instruction extended over a longer period and resulting in greater efficiency and less disappointment. It would also tend most powerfully to bring a recognised curriculum within the range of practical politics by removing any ground for the feeling of hardship and compulsion which acts so strongly as an obstruction at present. My chief object in addressing you was to invite all who seriously believe in and desire a compulsory curriculum to consider that, in the view of many who agree with them, immediate division is the surest way to promote the object they have in view, and that delaying division means delaying a curriculum.

June 2, 1902. "Curriculum" (137/30).

The British Botanic Garden.

Mr. Graham Bott's letter, which appears in the *Pharmaceutical Journal* of May 31, has a most discouraging tone, and I feel it only fair to Mr. Cochrane that it should not go unanswered. Of course Mr. Bott knows that the garden is intended mainly for enthusiasts, of which there is a large majority, in spite of his assertion to the contrary. Again, the garden is more or less a private concern, and Mr. Cochrane has no more need to show his balance-sheet than a man in business has to show his year's returns to his customers. If, however, Mr. Cochrane were to "throw more light" on the working of the venture, as suggested by Mr. Bott, I am afraid the subscribers would be deeply in his (Mr. Cochrane's) debt. I pay frequent visits to the garden, and am always delighted with the care which is bestowed on it and the thoroughness with which everything is done. I am afraid Mr. Bott cannot be very enthusiastic, or he would never think of even hinting at any suggestion which would tend in any way to discourage Mr. Cochrane, to whom botanists are greatly indebted for the useful and instructive garden which he has so studiously and carefully tended. The following paragraph appears in Mr. Graham Bott's article on *Chelidonium majus*, which appears in the *Pharmaceutical Journal* of September 7, 1901:—

> "My sincere thanks are due to Mr. P. Cochrane, of Perry Hill British Botanic Garden, for kindly supplying me, from time to time, with the various parts of the plant, from which I have drawn all the illustrations and described the morphological characters."

This makes it doubly difficult to understand why Mr. Bott should appear to be dissatisfied.

London, June 2, 1902. A. W. Nunn.

In reply to Mr. Graham Bott, I hasten to explain that the letter he refers to was written as a circular in October of last year, and was a true statement of affairs at that time. The original letter had remained in the possession of a friend who recently sent it to the Editor of the *P.J.*, with a request that attention might be directed to the garden, but he appears to have omitted to make it clear that the one hundred five shilling subscriptions had already been obtained. With regard to the absence of a financial statement, list of subscribers and report, I can give full information. An accurate account of income and expenditure has been kept, and I have intended some time to offer it for the inspection of subscribers and others, but always having what seemed to me more necessary matters to attend to—two of the chief being the keeping of the garden well tended and completing the collection of plants—and thinking no useful purpose would be served by sparing time to get out a clear statement, it has not yet been done. As soon as it can be done I will get one made, but it is needless to say that there is much else to do at present, and then anyone can see it at the garden who wishes. The same may be said with regard to a list of subscribers and a report. With regard to the secession of former subscribers, I may say that none have seceded excepting those who have left the neighbourhood and those who never visited the garden to my knowledge—to few, indeed, of whom I have liked to make any application for another subscription, except through the local and other papers. The original number of subscribers was small, and their united donations and subscriptions amounted to £19 12s. 6d. This sum, together with the £26 subscribed this year, is all the money I have received during the three and a-half years the garden has been in existence. To make this more intelligible, I must say that, owing to the unavoidable delay in planting the garden (caused by the many matters having to be attended to in its formation and in preparing the various habitats for the plants), I extended the date of expiration of the original admission ticket by one year gratis. Principles I hold to be of first importance are goodwill and righteousness, and no financial dealings of mine will be found to be at variance with them. The 100 subscriptions of 5s. represent the minimum amount necessary to pay outgoings for the year, and I consider it desirable to add to the number of subscribers through the year, in order that I may feel confident in preparing for another, and in renewing my agreement for the ground. I can quite see the matter from Mr. Bott's point of view, and fully accept his statement that he has no wish to disparage the undertaking.

Anerley, S.E., June 3, 1902. Philip Cochrane.

Sempervivum Tectorum.

It may be that Mr. Mumbray is quite right in attributing to this plant astringent properties only; but I remember some half century ago the application to an eruption on my face of the juice, mixed with cream, and used with a feather. I can testify that the sensation was "cooling," and gave marked relief. Solely because it was so pronounced I had thought of the name as "Sungreen"; on the stone-tiled roofs common in the West of England the plant flourished luxuriantly. Seven years ago, at the request of a lady who held it in high estimation, I procured with cost and difficulty some of the plant, expressed the juice, and prepared from it an ointment on the lines of lanoline cold cream, but cannot report on its success, or the want of it.

Dover, May 29, 1902. J. F. Brown.

Your correspondents have not quite exhausted the folk-lore of the houseleek. A treatise might almost be written on the different names of the plant alone. In the Alphita glossary, *s.v. Barbaionis*, it has the names *Oticados citrinum*, *themolus*, *semperviva*, and in French *jubarbe*; in English, syngrene, erewort, houslek. In explanation of each of these there is a learned note by the editor. It appears again under *Ayzon* with a still greater number of aliases. *Ayzon* itself is a very interesting name; the entry under this is:—"Ayzon, *semperviva idem, et dicitur ab ay quod est semper et zeo quod est vita. Gall. iubarbe, et Angl. syngrene.* [*Respice in sycados.*]" With *ayzon* we may compare aye-green (Gerard has aygreen), which Mr. Jackson says is still in use in some places, and *ayron*, which occurs in several old MSS. In the 'Sinonoma Bartolomei' the plant is also named *auricularis.* In a note to the entry I have given from 'Alphita' the editor quotes other synonyms—*e.g.*, sinfulle (from Earle's 'Plant Names'), silfgrene, and, in Latin, *Herba herculis* and *benades*; sinfulle he compares with sundew (Ger. *sindau*). To the names already cited Professor Henslow adds ('Medical Works of the Fourteenth Century') *Titemallos* and *Colatidis* (from Earle); and Lyte, following Apuleius, has the name *Vitalis*. In some parts of England the plant is known as thunder-beard, a translation of its old German name, *donderbart*. Friend gives *donderbloem, donnersbart*, and *Hauswurz* as its commoner German names, and says that both in England and Germany it shares the name Jupiter's Beard with the Anthyllis or Silver-bush. Folkard says that Charlemagne ordered it to be planted on every house roof as a defence against lightning. Akin to this supposed virtue is that attributed to the plant by Albertus Magnus of enabling those whose hands have been rubbed with its juice to take up red-hot iron without being burnt. It is curious that neither the name *erewort* nor the use of the plant to which it is due seems to have survived the fourteenth or fifteenth century. A receipt from Henslow's book may be interesting in this connection:—"For defnes. . . A-nothir. Tak the gres of a clene ele and the Jus of senigrene, of bothe a-lyk mykil; and put ther-of in the hole [whole] ere and ly upon that othir."

Epworth, June 2, 1902. C. C. Bell.

Extractum Belladonnæ Liquidum.

I am pleased to find that my paper on the above preparation has induced someone else to try further experiments, for I am convinced that there is a lot more work to be done. Mr. Nunn's suggested method of extraction is original, and demands consideration, but for the moment I am more interested with the latter part of his note, where he says he disagrees with my remarks on the value of the volumetric check in the Pharmacopœia method of estimation. He gives an experiment to support his views, but it seems to me that this experiment fully bears out the opinion that I hold and the remarks I made, for on his own showing he finds volumetrically more alkaloid than is present theoretically, and when using 0·1 gramme of a known salt we get a difference between the gravimetric and volumetric estimation of 0·009 gramme, which would mean, when working on the B.P. quantity of extract, 0·09 per cent. I think my contention that the volumetric test is only of use to check glaring inaccuracies holds good. Of course, during the reading of my paper, and the discussion afterwards, I gave a great deal more information bearing on this point than could possibly be condensed into an abstract, but I don't think much good would be done by going further into the matter now, a series of careful experiments being necessary to settle the question.

London, May 31, 1902. Edward A. Andrews.

Frangipanni.—A Correction.

In my article in the *Pharmaceutical Journal* of May 31, p. 456, on the antiquity of perfumes, reference is made to the scent "Frangipanni" as an imitation of the odorous principles of the flowers of *Plumeria alba*, whereas it should read *Plumeria rubra*, a West Indian tree, commonly known as Red Jasmine.

Lewisham, May 31, 1902. Graham Bott.

The Council Election.

I wish to tender my sincere thanks to those 1,303 of my fellow members of the Pharmaceutical Society for the generous and sympathetic support given at the recent Council election.

Cambridge, June 3, 1902. A. Sidney Campkin.

Mr. Pickering also desires to thank the 822 gentlemen who voted for him at the recent election.

REPLIES TO CORRESPONDENTS.

Paraffinum Molle (F. J. K.—74/17).—You are not legally entitled to label the substance as you suggest.

Sale of Poisons (W. J. S.—74/18).—No scheduled poison can legally be retailed by any unqualified person.

Division of the Minor (N. E. M.—136/7).—Your statements are not justified by the facts of the case.

Lethal Chamber (J. H. D.—74/20). We are making inquiries on the subject.

Commercial Travellers (J. W. H.—137/20).—Your complaint should be addressed to the travellers themselves or to their employers.

Anæsthesin (S. W. O.—74/19).—The name is applied to para-amido-benzoic acid, which has been introduced by the Farbenwerken in Höchst, as a local anæsthetic.

Medical Treatment (W. H. C.—74/21).—(1) No harm is likely to be caused by taking the medicine regularly, as suggested. (2) We cannot advise you what course of treatment your friend should pursue.

Enamelled Tin Boxes (T. F. W.—74/23).—Messrs. Shirley Bros., Limited, Whitecross Works, London, S.E., offer the articles you require, and you can also obtain them from Messrs. G. and T. Coward, Carlisle, or from the Tinplate Decorating Co., Limited, Melyn Tin Works, Neath.

Syrup of Glycerophosphates (J. W. T.—74/24).—The cause of the trouble appears to be the insolubility of the neutral calcium glycerophosphate employed in making the preparation. The use of the readily soluble acid glycerophosphate is said to be attended by more satisfactory results.

Hair Dyes (S. R. S.—74/22).—Three formulæ for brown hair dye were published in last week's *P.J.*, at page 468, and you will find a number of other formulæ in the *P.J.* for February 23, 1901. For black hair dye you will require two solutions—(1) Silver nitrate, 1; distilled water, 8; solution of ammonia, *q.s.* Dissolve the silver nitrate in the water, then add sufficient ammonia to redissolve the precipitate at first formed. (2) Pyrogallol, 1; gallic acid, 1; eau de Cologne, 8; distilled water, 16. Dissolve. Moisten the hair with (1) and let it dry. Then apply (2). This is best done with a soft tooth brush, using a comb to prevent the dye from coming into contact with the skin of the scalp.

Photographing Bonfire (J. E. B.—74/13).—It is difficult to give a definite reply to this question, but possibly the following hints may be useful:—The plate used should be a medium or rapid isochromatic backed plate, not ordinary one, and the lens, if such be available, of the rapid "flat field" type, such as the Goerz or Cooke, as these allow of a much wider angular aperture, and consequently shorter exposure than those in general use. The remaining factor is the character of the bonfire itself, and in order to ensure success, we think it would be advisable to expose several plates, giving exposures of from twenty seconds to two minutes, with a stop of *f*8. Develop slowly, using a dilute developer with the minimum quantity of bromide.

Special Notice to Correspondents.

All Communications for the 'Pharmaceutical Journal' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should arrive not later than Wednesday morning.

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LONDON: SATURDAY, JUNE 7, 1902.

POSSIBLE FUTURE CONDITIONS.

Though the question whether the Minor examination should be divided is unquestionably exciting considerable interest at the present time, continued argument of the subject seems to be undesirable, because division—as a subsidiary detail of another arrangement—has long been recognised as desirable from every point of view. Another reason is to be found in the circumstance that a communication from the Privy Council, already referred to at page 439, appears to bring into prominence a much more important question connected with pharmaceutical qualification, which has long been looked forward to as demanding consideration whenever opportunity arose. Whether the pointed manner in which attention has been directed to the remarks of Dr. Stevenson, by the Privy Council, indicates that there has been a change in the position taken by their Lordships in 1886, when the institution of "Compulsory Courses" was proposed by the Society's executive, or whether the necessity for improved pharmaceutical education, pointed out by Dr. Stevenson, is considered to call for further legislation, the inference to be drawn is that the promotion of a uniform system of education may before long be brought within the range of practical politics. A further reason for deprecating discussion is the fact that it has not hitherto led to full disclosure of the real grounds of objection to the establishment of a curriculum, or of such a system of education as has been the object of the Society from the first.

The real objection to a curriculum has never yet been openly stated; but its nature may be judged of from the arguments occasionally put forward, as to the hardship it would inflict if it were made a necessity, and as to the uselessness of the knowledge and skill to be gained by the study of chemistry and its practical application in the art of pharmacy. A further indication is afforded by the circumstance that most of the candidates for statutory qualification study for the purpose of passing that examination, and not for the sake of acquiring knowledge and skill that would be of use to them as pharmacists. The experience of teachers points in the same direction, and justifies the conclusion that the majority of the aspirants for statutory qualification do not desire to acquire the competent, practical knowledge and skill which the Act declares to be necessary. That is the real reason of objection to a systematic educational course; the reason, also, of the widespread antipathy with which the Pharmaceutical Society is regarded, as the qualifying body. Whatever degree of truth there may be in the plea that the business carried on by the rank and file of chemists and druggists does not require such knowledge and skill as passing the examination is supposed to be proof of; whatever ground there may be for the complaint that for persons intending to carry on such business the statutory qualifying examination inflicts hardship on them; to that extent such a plea raises the question that was long ago foreseen, viz., whether the necessity for a curriculum, together with the prevalence of such opinions, must not eventually lead to great disturbance of the conditions under which certain parts of the chemist's general mixed trade would be carried on to some extent, perhaps, without the same necessity of scientific education.

If, in the interests of pharmacy on the one hand, and out of consideration for those engaged in the general mixed trade now carried on by chemists in many parts of the country, some such cleavage became necessary, rendering pharmacists more dependent upon the special departments of operative pharmacy, dispensing, etc., considerable limitation of their number might be anticipated. Such a result might have great effect upon the financial resources of the Pharmaceutical Society, so far as its function as a qualifying body is concerned, and occasion might arise for supplementing its revenue from that source by an annual registration fee, or in some other way, so as to provide sufficient revenue for the execution of the Society's administrative duties, as appears to have become necessary in the case of the General Medical Council. Under existing conditions the Society, though the representative of the entire body of registered chemists, does not receive any support from two-thirds of the number. The alteration of the preliminary examination, in the general interest of the whole body, has already entailed a large pecuniary sacrifice, and the prospect of having to bear the cost of amended legislation furnishes another reason for the opinion that all who are represented in that work, as well as in the ordinary administration work, should contribute to its cost, as well as members of the Society.

ANNOTATIONS.

Arguments in Favour of a Pharmaceutical Curriculum should obviously come from individuals who favour the idea that aspirants for registration as chemists and druggists ought to be taught their business during the period of pupilage and compelled to undergo a continuous course of study in practical chemistry and practical pharmacy during that period. Failing the presentation of suitable arguments by such individuals, it has been felt desirable that the facts of the case should be presented clearly and fairly in the Pharmaceutical Society's official organ, without any undue advocacy of the position taken up by the majority of the Society's Council. Those members of the Council have an excellent case, but the best case in the world is not likely to secure supporters unless it is explained fully, and it is to be hoped, therefore, that advocates of a pharmaceutical curriculum will not let judgment go against them by default at the present time. To begin with, they ought to make it clear that, when they speak of a curriculum, they do not mean a university training, or any other prolonged course of specialised education, which would necessitate unreasonable suspension of a student's business activities, but simply that they believe employers, who take apprentices, ought to train them efficiently and be prepared to provide such facilities as will enable them to acquire a satisfactory practical knowledge of the sciences which cannot well be taught in a pharmacy. The greater part of the existing opposition to the idea of a compulsory curriculum is due to misconceptions as to what is meant by those who advocate the provision of proper educational facilities for pharmaceutical students, and the sooner misapprehension on that point is removed the better it will be for all concerned.

Mr. Dott's Protest (see p. 496) affords useful evidence against the case which he thinks he supports. Thus, he takes exception to the statement that the mere fact of dividing the Minor examination into two parts, without provision being made for the education of candidates, would be equivalent to a lowering of the "standard" by reducing the stringency of the examination. But he then proceeds to explain that "the first purpose to be served by dividing the examination is to allow more time for the practical subjects." He holds that the three hours at present available are "quite insufficient to thoroughly test a candidate's knowledge." Just so, that may well be admitted; but it is equivalent to saying that, if the examination be divided, it will be necessary to increase the stringency by extending the time during which a candidate's fitness to practise pharmacy is to be tested. It would be a most remarkable thing if lengthening the examination did not make the test a more difficult one to satisfy, in the case of those who are thoroughly conversant with their subject, as well as in the case of those who are imperfectly educated. But to candidates who have been properly educated it would probably be immaterial how the examination was arranged, though individuals who have studied to pass rather than to know, or those who suffer much from nervous strain, might be expected to prefer getting through what to them is a somewhat painful ordeal in as short a time as possible.

Mr. Dott's Proposal to Lengthen the Time during which candidates are under examination must, therefore, be regarded as including him in the ranks of those who insist that division of the qualifying examination, without the simultaneous establishment of suitable provisions for teaching, must be accompanied by more stringent tests of ability to practise pharmacy. If the three hours at present available in the practical parts of the examination be quite insufficient for thoroughly testing a candidate's knowledge of dispensing, pharmacy, practical chemistry and the standardisation of potent pharmaceutical articles, that time has, at least, been found sufficient for ascertaining that 67·9 per cent. of the candidates show incompetence in those matters which form—or ought to form—part of the daily routine of the chemist's business. The point to which attention has now been directed is the display of gross ignorance in those subjects, which cannot be compensated for by temporary encyclopedic acquaintance with the mysteries of the benzene ring or other theoretical subjects. If the safety of the public imperatively calls for competence in practical pharmacy and practical chemistry, as Dr. Stevenson advises the Privy Council, practical teaching of those subjects can alone make good the deficiency which is shown by such a large number of the candidates for qualification.

The Letter of "Curriculum" at page 496 puts his case quite clearly, and reveals the writer as one who seems to despair of arriving at the desired goal except by an unnecessarily circuitous route. He would insist upon a preliminary examination being passed prior to an apprenticeship of three or more years, after which the student would be expected to attend a systematic six to nine months' course of instruction in a recognised school, or college, or university. He would then be admitted to an intermediate examination in chemistry, physics, and botany, after which he must devote from one to two years to a systematic study (where?) of the technical applications of those sciences, comprised under the general term pharmacy, before being permitted to present himself for the final or qualifying examination. The time required to secure qualification under "Curriculum's" otherwise admirable scheme would, including the necessary intervals for holidays and examinations, be nearly six years in all, thus:—Apprenticeship, three years or more; college course in science, six to nine months; course of technical instruction, one to two years. That is to say, a youth of sixteen would not be able to look forward to securing registration and being in a position to earn his own living before he was twenty-three. There might be much to commend such a scheme, looking at the matter from a purely professional point of view; but it is doubtful whether such a "curriculum" would commend itself, upon the whole, to the present generation of chemists and druggists.

The Weak Point of "Curriculum's" proposals is that he would compel students who have passed the proposed intermediate examination in science to devote one or two years to the study of a subject which should properly have engaged their attention during the term of apprenticeship. That is to say, an unsystematic study of pharmacopedics is to be supplemented, after a few months' college course of scientific study, by systematic study of the same technical subject. But it appears somewhat irrational to admit empirical knowledge into the course of training, especially at a time when wrong impressions are so easily formed, and the logical outcome of the scheme suggested by "Curriculum" appears to be the total abolition of apprenticeship, or the course of shop training now usually dignified by that name. The simplest and most logical plan, in such a case, would be to insist upon registration as students, after passing an approved preliminary examination, and two years before entering for an intermediate examination in science. A further interval of at least two years should then be permitted to elapse, during which the students must secure the necessary technical training in the establishments of duly registered persons. Then, and not till them, candidates of full age should be examined as to their fitness to practise pharmacy and be admitted to registration after satisfying the examiners. But a more feasible alternative to such a plan is that briefly described last week (see p. 471), arrangements being made whereby a practical course of study should be rendered continuous during apprenticeship, and the student's education completed by a finishing course at a recognised school of pharmacy. The first part of the divided examination might then be taken as soon as the period of pupilage was completed, and the concluding part about twelve months later.

The General Medical Council, at the concluding meeting of the summer session, on Tuesday last, decided to make a grant of £100 to the Pharmaceutical Society of Great Britain, towards defraying the cost of the Society's research work in connection with the solubilities of chemical substances official in the British Pharmacopœia. The Pharmacopœia Committee had previously reported that up to the present date 32,086 copies of the British Pharmacopœia, 1898, and 354 copies of the Indian and Colonial Addendum, 1900, had been disposed of. The President was authorised to direct the preparation during the summer of a further issue of 1,500 copies of the British Pharmacopœia, 1898. It was also stated in the report that conferences had been held with representatives of the pharmaceutical societies of Great Britain and of Ireland, at which useful discussions had taken place as to the preliminary researches which were necessary in preparation for the next pharmacopœia. The conference had also had before it a series of reports containing the results of a minute and exhaustive inquiry into the solubilities of the chemical substances included in the Pharmacopœia. That inquiry had been conducted by Professor Greenish, under the direction of the Research Committee of the Pharmaceutical Society of Great Britain, in the laboratories of the Society. In order to ascertain the purity of the drugs under examination, it had also been necessary to scrutinise afresh the chemical tests given for them in the Pharmacopœia. That scrutiny has led to suggestions for the improvement of these tests, which promise to be of great value in relation to pharmaceutical chemistry, and will call for the fullest consideration in the revision of the Pharmacopœia.

The British Pharmacopœia constitutes one of the chief assets of the General Medical Council, and, in a report of the Financial Relations Committee of that body, it is stated that a sum of about £3,600 has been derived from profit upon the issues of the national medicine book. The receipts and expenditure upon former editions of the Pharmacopœia cannot now be ascertained with exactitude, as, although at times statements have been prepared, the accounts have not been kept entirely separate from the general expenses of the Council. But, so far as can be ascertained, up to the year 1880 there was a small balance of profit amounting to £80, from 1880 to 1885 a profit of £350, and from 1885 to 1898 a profit of £2,000. Already the new edition of 1898 shows a better result, there being an apparent profit of £800, whilst unsold copies are in hand to the approximate value of £400. Thus over the whole period from 1858 to the present time the Pharmacopœia has yielded about £3,600, or about £90 a year. Although for the reasons above stated these figures must not be taken as exact, the Financial Relations Committee thinks it is probable that the error is not large enough to be material.

The Present Assets of the General Medical Council do not materially exceed £41,500 altogether, so that the whole of the Pharmacopœia profits, the current registration fees, and, in addition, some £3,400 derived from interest, have been expended. From this it follows that throughout the whole period of the Council's work the current £5 registration fees have failed to meet the expenditure by something like £900 a year, although it is possible that there may be individual years or even periods when the above-mentioned fees were adequate, if the receipts were large and the expenditure happened to be small. The Committee reminds the Council that this aspect of the matter—the insufficiency of the £5 registration fees to pay their way unaided, even over the whole period, which embraces many favourable years—is of vital importance to a full recognition of the fact that the present deficiency of resources is inherent in the limitations contained in the Medical Act, 1858. That Act was, by reason of the circumstances surrounding its inception, tentative, and it is not surprising, therefore, to find that after an experience of over forty years some of its provisions have proved to be inadequate, and the Council is at present dependent on the surplusage of fees remaining as accumulations of the income of the English and Scottish Branch Councils. Those assets, however, are rapidly diminishing, since the work of the Council causes at the present time an annual deficit of over £1,200. In fact, the deficit for 1901 was £1,509, and the Irish asset of the kind specified has already been exhausted. In conclusion, the Committee points out that a complete scheme of financial reform must be adopted at the earliest possible date, or the efficient work of the General Medical Council will cease from lack of resources within the next ten years.

The Problems Before the General Medical Council, according to the Financial Relations Committee, are (1) the provision of sufficient revenue for the execution of its duties, and (2) the constitution of a central financial administration. In regard to the first, the Committee favoured the imposition of a student's registration fee of one pound, and was not averse to raising the initial registration fee for medical practitioners from five pounds to seven pounds. The Committee also suggested the abolition of the Branch Councils with their registrars and officers. In the course of the discussion on the report, various proposals were made, including one to the effect that an annual licensing fee be substituted for the present registration fee of five pounds, but that did not commend itself to a large majority of the Council. Ultimately, it was decided to take steps to charge students a registration fee of one pound, and to raise the registration fee for medical practitioners to a sum not exceeding ten pounds. It was also decided to reappoint the Financial Relations Committee, with instructions to draft a Medical Acts Amendment Bill, carrying out principles of financial reform approved by the Council.

"Singular Business Methods" is the appropriate heading to a paragraph in the *St. James's Gazette*, wherein attention is directed to the recent prosecution of a drug store manager, who was charged with embezzling money belonging to his employers. The accused managed the business of Messrs. Lewis and Burrows, Limited, at Lavender Hill, Battersea, and the allegation against him was that he was short by several pounds in his takings, and that he had misappropriated the money entrusted to him and his two assistants to give change. The general manager of the firm admitted in his evidence that the accused handed him a sum of money sufficient to cover the deficiency, but that he refused to accept it, and one of the assistants at the establishment disclosed a strange method of irregularity in the management of accounts. He said the change money was often appropriated to increase the takings on dull days in order to show a good return and satisfy the head office, the deficiency being made good by accepting money without giving customers duplicate checks of the purchases. The accused, who was acknowledged to be an exceptionally smart manager and to have worked up the business remarkably, had even been known, so it was said, to pay money out of his own pocket for the purpose of adding to the takings, but he was nevertheless committed for trial on the charge of having feloniously stolen the moneys of his employers (see *ante*, p. 443). As briefly reported in the *P.J.* last week, the jury returned a verdict of not guilty, being apparently convinced that the accused had acted as he did without any dishonest intention. Mr. Loveland-Loveland, before whom the case was tried, had previously commented upon the remarkable system of making up accounts, which seems to have been adopted with the idea of making it appear that the business was steadily improving, and the accused himself owned that he now saw his conduct had been indiscreet. The shareholders in the firm should be interested by the revelations which have been made in connection with this case, and individuals seeking situations as assistants, who think it is a fine thing to gain experience in drug stores, may also find food for reflection in the foregoing statement of facts.

Another Peculiar Case has been brought before Sir Albert De Rutzen, at Bow Street Police Court, where William Henry Prendergast, alias Edward Barrow, described as a druggist, was charged on remand last week with conspiracy to defraud. It was stated that the prisoner and a man named Way, who was recently sentenced to a term of imprisonment, formerly carried on business as drysalters in Holborn, the business being subsequently converted into a limited company. They advertised for clerks, collectors, and secretaries, and represented to applicants for appointments that they were doing a large business, realising a profit of from 50 to 100 per cent. Believing this to be true several people deposited sums varying from £50 to £150 and received appointments at good salaries, with promises of more to come. As a matter of fact, very little business was done, and some of the goods dealt in were sold at a loss. Ultimately, the prisoner was committed for trial, bail being fixed at two sureties in £100.

The Indian Opium Trade is dealt with in a recently-issued parliamentary paper which contains the correspondence between Sir Joseph Pease, M.P., and the Secretary of State for India on the increasing cultivation of the poppy in British India. As has already been reported in the *P.J.*, Sir Joseph Pease forwarded to Lord George Hamilton a copy of a memorial to Lord Salisbury from the Society for the Suppression of the Opium Trade, in which Lord Salisbury was reminded of a declaration he made twenty-five years ago that it was "not the intention of the Government to push any further the Bengal system of opium cultivation." Notwithstanding that and other pledges, the Indian Government was charged by the memorialists with having adopted the policy of largely extending the cultivation of the poppy in British India, with the object of making up for the lessened profit due to Chinese competition. In his reply, Lord George Hamilton states that the Opium Commission of 1893 showed that the amount of Bengal opium annually manufactured for export averaged 52,419 chests in the ten years preceding 1893. Owing to bad seasons and poor yields the production and the area sown fell off rapidly towards the end of that period, and the decline continued for some years. Since then the conditions of cultivation have improved, and a natural extension of the area placed by the cultivators under poppy has ensued. But during recent years the quantity of Bengal opium manufactured for export has been much below the average quantity manufactured and exported in the ten years preceding 1893. For the eight years ending 1897-98 the annual out-turn has averaged only 40,500 chests. In 1898-99, as the result of better seasons and a larger area placed by the cultivators under poppy, it rose to 51,719 chests, and in 1899-1900 to 52,443 chests, the latter figure being practically identical with the average production of the ten years preceding 1893, though considerably below the yield in the best years of that period. As the Government of India has lately come to the conclusion that 48,000 chests of export opium is about the average out-turn which the area under poppy cultivation in Bengal under present conditions may be expected to produce, and has given instructions that for the present that area shall not be exceeded, there need be no apprehension that the Indian Government harbours any intention of extending the cultivation of the drug beyond present limits, with a view to putting increasing quantities of opium on the China market. On the contrary, that Government, though not committed to the policy of continuous diminution of the area under poppy, has, in the orders referred to, fixed the future standard of production relatively low, to avoid an extension of cultivation, which, in its opinion, would be undesirable.

The Selborne Society exists for the purpose of preserving wild animals and plants from unnecessary destruction, also for the protection of places and objects of antiquarian interest or natural beauty, and the promotion of the study of natural history. At the annual meeting of the Society, held on May 29, the chair was taken by the President, Lord Avebury, who prefaced an address on the life of plants by expressing a wish that something might be done towards stopping the destruction of flowers in the neighbourhood of London and thus preventing the total disappearance of many of the most beautiful wild flowers. He said he had never been able to see any way in which more legal protection could be afforded to the wild flowers which add so much to the beauty of our woods and fields, but he would do his best to carry out any practical suggestion. The members of the Society might, he thought, look with a greater hope of success to an endeavour to create amongst the people better taste and feeling with regard to beautiful flowers. One way would be by inducing them to feel that the flowers offered a most attractive field for examination and study.

The Corroding Effect of Alcohol on Instruments is referred to by the *Medical Press*, which directs attention to some experiments that have recently been conducted by Dr. Malmejac with the object of discovering the effect of absolute alcohol on metals. Dr. Malmejac in his experiments used 95 per cent. alcohol, which left no residue on evaporation. The metals—copper, iron, tin, lead, zinc, and galvanised iron—were corked up with alcohol in glass flasks and kept at ordinary temperatures for six months. Copper was entirely unacted upon, but in the case of all the other metals there was a deposit on the bottom of the flask and the metal was covered with a similar deposit. In the case of tin, lead, zinc, and galvanised iron the deposit was white; that from the iron was red, resembling iron rust. All of the liquids, except that in which the lead had been placed, filtered clear; the latter retained a milky appearance after repeated filterings through double filters. The clear filtrates from iron, lead, zinc, and galvanised iron gave much residue on evaporation, while the residue from tin was hardly appreciable. In the former group it was clear that not only had the metal been oxidised, but a considerable quantity had entered into the solution.

The Warning to the Benevolent, by the Secretary of the Pharmaceutical Society, which appeared in the *P.J.* of May 24 last (see p. 438), has resulted in the arrest at Yeovil of the person who professes to be Mary Masters. She had managed to obtain two sums of money from local chemists, and was brought before the Yeovil magistrates on June 2, when she was charged with begging and Mr. Bremridge's letter was read, but the magistrates decided to discharge the prisoner because of the recent declaration of peace.

POISONING CASES.

Eighteen deaths from poison have been reported during the past week—five accidental cases and thirteen suicides—thus —

Poison.	Accident.	Suicide.
Carbolic Acid	—	3
Chloroform (anæsthetic)	3	—
Hydrochloric Acid	—	1
Laudanum	—	1
Liniment	1	—
Lotion	1	
Morphine	—	1
Oxalic Acid	—	2
Potassium Cyanide	—	1
Prussic Acid	–	1
Sheep Dip	—	1
Zinc Chloride	–	1
Other Poison	—	1

Carbolic Acid was taken by a Nottingham man; also by a labourer at North Shields, and a woman at Coventry.

Chloroform, used as an anæsthetic, caused the death of three patients under operation—a man at Nottingham, a domestic servant at the Great Northern Central Hospital, London, and a boy at Attercliffe, Sheffield.

Hydrochloric Acid was purposely taken by a Leytonstone man, who subsequently died.

Laudanum was taken with fatal effect by a commercial traveller at Glasgow.

Liniment, containing poison, killed a child who drank some of it inadvertently.

Lotion containing poison, but not kept in a special bottle, was taken in mistake for medicine by a woman at Castleton, near Rochdale.

Morphine, in pills, was taken by a Scotch surgeon who was visiting Manchester, and had been in a strange condition of mind.

Oxalic Acid caused death in two cases—a tailor at Ashton (Lancs.) and a fishmonger at Llanelly.

Potassium Cyanide was taken with suicidal intent by an Islington man.

Prussic Acid was taken by a chemist and druggist named Frater, at East Ham.

Sheep Dip was the cause of death in the case of a man who was found in a dying condition in a shepherd's hut near Wylye.

Zinc Chloride, presumably in a form of soldering solution, was purposely taken by an engineer's turner at Hammersmith.

Other Poison.—A woman was found suffering from the effects of poison, unnamed, in Bloomsbury, and died shortly after removal to the Royal Free Hospital.

Non-Fatal Cases.—A Mumbles publican is reported as having taken some poisonous liniment in mistake for a sleeping draught. In addition, suicides have been attempted with carbolic, hydrochloric, and oxalic acids; also two cases with laudanum and one with photographic chemicals.

NOTES IN PARLIAMENT.

The Food and Drugs Act.—The House of Commons resumed business on May 26, after the Whitsuntide holidays, and on May 27 there was some discussion on the administration of the Food and Drugs Act. This arose on the vote for the Agricultural Department, and, necessarily, in his reply, Mr. Hanbury could only deal with the administration of the Act as it affects that department. He stated, however, that in some of our large towns the Act has not been carried out by any means efficiently. He added that of course it is a new Act; the local authorities must be given time to properly use their powers. But if the local authorities, after due time has elapsed, fail to carry out the Act satisfactorily, he has, he said, at his back a reserve force which will enable him to take the matter into his own hands, and he will show no unwillingness to use that force.

The Interests of the Honest Trader and of the consumer demand, said Mr. Hanbury, that full effect shall be given to the Act, and that town and country alike shall be protected from adulteration. Sir E. Strachey had suggested that it would be a good thing to keep a check upon the local authorities by sending down an inspector. Apart from the Local Government Board, there are, said Mr. Hanbury, two inspectors who travel about the country, and report to the Board how far the Act is being efficiently carried out. He thought that in such a case as that of butter the producer has a perfect right to his trade description; in other words that articles ought not to be sold under the name of butter which really are not entitled to that designation. As to the use of food preservatives, personally he had no wish to encourage their use, but if they are to be used means should be taken to ensure that they shall be as pure as possible.

Fertilisers.—Mr. Hanbury availed himself of the occasion above referred to in order to express regret that the Act relating to fertilisers and feeding stuffs has not been made greater use of. He thought that there must be something wrong somewhere to account for the comparative failure of the Act. He would inquire into the matter, and would be glad if steps could be taken to bring the benefits of the Act within the range of farmers, especially small farmers.

Dr. Copeland's Experiments.—On May 27, in the House of Commons in Committee of Supply on the Local Government Board Vote, Mr. Bayley renewed his attack on the Local Government Board for having, as he alleged, allowed Dr. Copeland, one of its inspectors, to cultivate vaccine lymph by the agency of a monkey instead of a calf. Mr. Long was compelled again to explain that the experiments of Dr. Copeland were of a private character. Personally, he thought that no one excepting the hon. member himself cared whether a monkey or a calf was used for the purposes of Dr. Copeland's experiments. Neither the monkey nor the calf, where a calf was employed, was used for the direct extraction of lymph, which went through processes before it was used on the human subject. Dr. Copeland conducted some extremely valuable experiments entirely on his own account, and the very first person he vaccinated with this particular lymph, which had excited the ire of Mr. Bayley, was Mr. Long himself.

Inflammable Lamp Oils.—Mr. H. C. Richards has questioned the Home Secretary as to the verdict of the jury in the recent inquiry as to the cause of death by burning in Lever Street, St. Luke's, E.C., viz., that it was owing to the use of inflammable Tea Rose Oil, sold by the Standard Oil Company of America. He asked whether the right hon. gentleman would direct an official inquiry to be held by persons unconnected with the Home Office, so that the cause of these constantly recurring lamp accidents in this district of London might be independently traced to their source. Mr. Ritchie replied that he is now considering whether it may not be possible to institute some inquiry, with special reference to the facts of the recent cases of death by burning.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Act.

Lime Water.

At Watford Petty Sessions on Tuesday, May 27, William Edward Lander, described as a druggist, of St. Albans Road, Watford, was summoned for selling lime-water which was certified by the public analyst to be 40 per cent. deficient in strength. Inspector Rushworth said he made no suggestion of fraud, but it was necessary that lime-water and other drugs should be of proper strength or they would not have the effect required by medical men.—Defendant was fined £1 and £1 0s. 6d. costs.

Lime Water.

At Watford Petty Sessions, on Tuesday, May 27, Ernest S. Stone was fined £1 and costs for selling lime-water which was deficient in strength. Inspector Rushworth stated that lime-water cost about a penny per gallon, and was sold at twopence a pint.

Spirit of Nitrous Ether.

At Bow Street Police Court on Wednesday, May 28, before Mr. Marsham, Charles Keele, described as a chemist [The name Charles Keele does not appear on the Register of Chemists and Druggists, 1902.—Ed. *P.J.*], of 3, Great Russell Street, W.C., was summoned for selling spirit of nitrous ether 52·5 per cent. deficient in ethyl nitrite.—Defendant attributed the deficiency to evaporation, but stated that he had tried to avoid complaints by getting a fresh supply each month and keeping the sweet nitre in a tightly-stopped bottle in a cool place.—Defendant was fined £2 and 12s. 6d. costs.

Spirit of Nitrous Ether.

At Bow Street Police Court on Wednesday, May 28, George Squire Boutall, chemist and druggist, 239, High Holborn, W.C., was summoned for selling spirit of nitrous ether deficient in ethyl nitrite to the extent of 58 per cent.—For the defence it was stated that defendant did his best to supply drugs in accordance with the British Pharmacopœia, and to that end he had given his managers notice to purchase sweet nitre in smaller bottles in future, to avoid evaporation as much as possible.—Mr. Marsham imposed a fine of £3 and 12s. 6d. costs.—Defendant said the manufacturers had taken the responsibility, but he considered the fine excessive. He had fifteen shops, and always conducted his business properly.—The magistrate was understood to say that if he had known defendant had fifteen shops he should have imposed a larger fine.

Gregory's Powder.

At Bow Street Police Court an Wednesday, May 28, Thomas Williams, chemist, of 98, Gray's Inn Road, W.C., was summoned for selling Gregory's powder containing 60 per cent. of magnesium carbonate, instead of magnesium oxide.—Mr. H. C. Jones, for the prosecution, stated that a powder mixed with magnesium carbonate instead of light magnesia would not have the desired effect. When the Inspector asked for the powder he was told there was none in stock, and some was made up for him.—Mr. Marsham asked if there was plenty of rhubarb in the powder.—Mr. Jones: Yes.—The defendant pointed out that the rhubarb was the most expensive part of the powder, while so far as he knew the effect of light magnesia was not very different from that of the heavy variety.—Fined £3 and 12s. 6d. costs.

CHEMICAL SOCIETY.

At a meeting held on May 28, at Burlington House, Piccadilly, Professor Meldola was in the chair. After the usual preliminary business had been disposed of,

Mr. Stubbs was called on to read a paper by Dr. Thorpe and himself on

Taxine.

He explained that this work had been undertaken at the request of the Board of Agriculture, on account of several cases of poisoning of animals after eating yew. Referring to the history of taxine, the author said that it was first isolated by Lucas in 1876, by exhausting the leaves with ether, and then either shaking out the ethereal solution with dilute sulphuric acid, or distilling off the ether and treating the residue thus obtained with acid. Another method which had been used by a later investigator was to treat the leaves with solution of tartaric acid, and then precipitate the alkaloid and extract it with benzene. In the present work the leaves of both male and female trees of one species, *Taxus baccata*, had been examined, and alkaloid had been obtained from both. By treatment with 1 per cent. sulphuric acid 0·11 per cent. of alkaloid had been obtained from the fresh leaves, and by a similar method the dry leaves yielded 0·12 per cent. Other methods of exhaustion were tried—viz., extraction with ether, and alcohol, but these did not give satisfactory results, the amount of alkaloid being small. The authors finally adopted the process of digesting (macerating) the powdered leaves with 1 per cent. sulphuric acid for five or six days; then making the solution alkaline and extracting with ether. Purification was effected by re-solution in ether and re-precipitation. In this way 0·18 per cent. of alkaloid was obtained. The substance is very bitter in taste. Obtained by evaporation of its ethereal solution it is without smell, but when formed by precipitation it has a musty odour. It is insoluble in petroleum ether. It has not been obtained crystalline, but dries to a varnish, which can be scaled off. It rapidly undergoes change when warmed with dilute hydrochloric or sulphuric acid. Several salts have been prepared, but these do not crystallise. The combustion figures agree fairly well with the formula, $C_{37}H_{52}NO_{10}$, assigned by Hilge and Brandt to the alkaloid, though the authors consider that its constitution has by no means been definitely established. It was suggested that two alkaloids might be present.

Mr. W. R. Dunstan said that one question to be settled was, "Is yew poisonous only at certain times of the year?" as is sometimes stated. He thought that it was necessary to obtain some crystalline derivative, and study that.

Mr. Goulding said some years ago he had been working with Mr. Dymond on the subject. They had used the ether extraction method, and had not obtained any alkaloid from dry yew. They found that the alkaloid quickly decomposed when dried at a high temperature. From fresh yew an alkaloid melting at 82°·6—83°·6 had been prepared. Several attempts had been made to prepare the hydrochloride in the crystalline form by passing dry hydrochloric acid into the ethereal solution of the alkaloid, but it was found that although an apparently crystalline body was precipitated this was quickly changed into an oily substance. Mr. Goulding had seen deer, and also sheep, cropping the yew trees in winter. He thought the poisoning cases were generally from eating dry leaves.

Dr. Voelcker said that the kind of animal made a difference, the yew probably not being poisonous to all alike. He had understood that withered yew was not poisonous. It might be compared to cases of acorn poisoning, as sometimes animals consumed large quantities of acorns or yew, as the case might be, when their proper food was scarce, with fatal results.

The Chairman referred to the higher yield obtained by extraction with dilute sulphuric acid, and made the suggestion that the alkaloid might be in the form of glucoside or other loose combination.

Mr. Stubbs, in reply, said he thought it was not present as a glucoside. He thought the larger yield was due to the fact that cold dilute sulphuric acid had been used instead of warm. In reference to what Mr. Goulding had said, they had obtained about the same amount of alkaloid from both dry and fresh leaves. They had worked on withered leaves. "Fresh" seems to be rather a misnomer, because the leaves were not operated on whilst still in a fresh condition, but after picking were allowed to dry, and then stored for some time before use. The authors can, therefore, scarcely be said to have worked on the fresh leaves. The next paper was communicated by

Dr. Leather on

Soil Samples.

In taking samples of soil in India the author was in the habit of using an auger about nine inches deep, and then taking a large number of borings and mixing. The nitrogen, phosphoric acid, and potash were determined, and the various figures compared. He considered the figures showed too much variation, and that a more accurate method of drawing samples was required.

Dr. Dyer thought the results very good. They agreed sufficiently for practical purposes.

Mr. Hall said he found an auger work well in soils not containing many stones, but for a hard soil it was useless. Various tools are required, according to the nature of the soil.

Dr. Leather followed with a paper on excessively saline

Indian Well Waters.

Some which he had examined contained from 0·2 to 2 per cent. sodium chloride, besides nitrates, calcium, and magnesium salts, and small amounts of carbonate. The question of great practical importance to agriculturists was as to how much sodium salts might be present in soil without damage to crops. Sodium carbonate was the most pernicious, but the quantity depended on the plant. In some cases the water might be used for irrigation purposes if it did not contain more than 0·5 per cent., provided that the crop had germinated.

Mr. Spiller said that in 1865 he had examined some saline waters from Lohhar Lake, India. The water contained 8¼ per cent. of salts, consisting of two parts of NaCl and one part of Na_2CO_3. Later he had obtained a solution containing 75 per cent. Na_2CO_3.

Dr. Hewitt then read a paper on "Dinitro-fluoresceïn."

ROYAL INSTITUTION.

At a meeting held on Friday, May 30, Sir William Crookes was in the chair, and Professor Fleming delivered a discourse on the

Electronic Theory of Electricity.

The principal experimental work which led up to the formulation of this theory was, he said, performed some twenty-five years ago by Goldstein, Hittoff, and Crookes. They had made their researches on the electric discharge in high vacua. Experiments were then performed by the lecturer to illustrate the difference between discharges in high and low vacua. In the high vacuum a continuous glow of coloured light was produced, whilst in the low vacuum rings of light appeared. As a result of his researches Crookes ascribed the phenomena of the high vacuum tube to the existence of another condition of matter, which he called radiant matter. The lecturer then proceeded to show some of the effects produced by the stream of cathode particles. A small vane placed in the path of the rays was caused to rotate rapidly. A piece of platinum and a ruby submitted to a bombardment of these particles glowed for some time after the current had been stopped. It was then shown that the stream of cathode matter could be deflected by a magnet. These phenomena could be explained by considering the stream to consist of negatively electrified particles having an enormous velocity. Another remarkable property possessed by these negative particles is that of causing the condensation of water vapour. It is probable, therefore, that they are an important factor in cloud formation. The term electron is used to express the natural unit of electricity—the charge on an atom of hydrogen, or on a cathode particle. The question naturally arises as to where these particles come from. According to some they are considered to be detached from atoms—every atom possessing a garment consisting of an electron—and when these are cast off the ions go wandering about, hence the name "ion." Considering next the movement of electrons, Professor Fleming said that conductors of electricity must be permeable to electrons. All conductors were made up of more or less simple molecules. Taking a piece of metal, it might be considered as being made up of atoms, ions, and electrons. The explanation of the fact that metals became better conductors on cooling was that the movement of the particles was slackened. This might be compared to the slowing down of the traffic in a busy thoroughfare, and the consequent greater facility afforded persons for threading their way amongst the vehicles. In non-conductors there was considerable obstruction, owing to the complexity of their molecules. It was a question of diffusion. The electrification produced by the friction of sealing wax was due to the greater diffusion of electrons. Electrons were the basis of chemical action; they were always being produced in sunshine and bright light. It was a curious fact that the air at the foot of waterfalls was negatively electrified, whilst near sea waves it was positive. This might account for the difference in benefit derived by different people from sea and mountain air. Electrons must be powerful factors in the production of atmospheric effects; the appearance of sun-spots, auroræ, and electro-magnetic disturbances were connected in this way.

EDINBURGH DISTRICT CHEMISTS' TRADE ASSOCIATION.

The annual business meeting of the Edinburgh District Chemists' Trade Association was held in the Pharmaceutical Society's House, 36, York Place, Edinburgh, on Thursday, May 29, Mr. George Lunan (Chairman) presiding.

Mr. C. F. Henry (Hon. Secretary) read

The Annual Report,

from which it appeared that they had had a quiet but useful session. The subjects which had chiefly engaged attention were the apprenticeship question, the question of Inland Revenue stamps in perforated sheets, and the Poison Regulations. The label book, with examples of labels liable or otherwise to stamp duty, had also been useful.

On the motion of Mr. Forret, seconded by Mr. James Nesbit, the report was adopted.

Mr. R. L. Hendry (Hon. Treasurer) read

The Financial Statement,

which was eminently satisfactory, showing that the session began with a balance of £36 16s. 8d. and closed with a balance of £42 18s. 10d.

The Chairman said they were much indebted to the energetic action of the Treasurer for this satisfactory result.

On the motion of Mr. McBain, seconded by Mr. Forret, it was agreed to give a donation of £2 2s. to the Benevolent Fund and £1 1s. to the Orphan Fund of the Pharmaceutical Society.

On the motion of Mr. Bowman, seconded by Mr. McLaren, it was agreed to place the balance on deposit receipt as a reserve fund.

Medicines for Poor Patients.

Mr. Henry said he thought there was need to draw the attention of prescribers of the present generation to the understanding which had long been in existence as to making an abatement in any cases in which the patient was unable to pay the ordinary charges. Speaking to a medical man recently, he had been informed that he felt it necessary to send patients in poor circumstances to places where medicines were sold cheap, although he could not always be sure that they were good. The doctor was surprised to learn that any chemist would make a reduction in price if he put a mark to that effect on the prescription. It was a very common thing twenty years ago to see prescriptions marked in the corner "p.p." or "ex," but such a thing was now very rarely, if ever, met with. He believed the younger generation of prescribers were not aware of the plan that formerly was often acted upon. Therefore he thought the Association should send a circular letter to the medical profession in the district drawing their attention anew to the arrangement.

Mr. James Nesbit said he approved of the proposal, but if they were going to send a circular he thought they might at the same time draw attention to the evils connected with that modern curse of pharmacy, the prescribing of proprietary medicines. He thought this object would be best attained by sending out a reprint of the address by Dr. Luff on the decline in the art of prescribing, which was published in the *Pharmaceutical Journal* of November 9, 1901.

The Chairman suggested that they might also include excerpts from such addresses as that of Professor Stephenson, of Aberdeen, on this subject.

In the discussion, which was taken part in by Messrs. Lunan, McLaren, Hill, Forret, McBain, Bowman, Hendry, and Storrar, general agreement was expressed with the opinions stated by Messrs. Henry and Nesbit. Mr. Hendry had some fear that too many prescriptions would be marked for reduction. Mr. Bowman wished some understanding as to how much reduction should be made. Several members indicated a fear that in regard to the question of prescribing proprietaries, medical men might be disposed to think they were trying to lecture them. It was ultimately agreed to remit to the Committee to draw up and submit for approval circulars dealing with both questions.

Federation of Local Pharmaceutical Associations.

On the motion of Mr. Henry, seconded by Mr. McBain, it was agreed that the Association should become affiliated to the Federation of Local Pharmaceutical Associations.

On the motion of Mr. McLaren, seconded by Mr. Hendry, Mr. Storrar was elected a member of the Association.

Election of Officers.

The following were elected officebearers for the ensuing year:—W. S. Glass, Chairman; J. A. Forret, Vice-Chairman; Secretary, C. F. Henry, 1, Brandon Terrace, Edinburgh; Assistant Secretary, E. Brindle; Treasurer, R. L. Hendry; and as members of Committee, Messrs. Blenkiron, Boa, Bowman, Lunan, McBain, D. McGlashan, D. McLaren, MacPherson, James Nesbit, and Storrar.

On the motion of Mr. Hendry it was unanimously agreed to thank the Pharmaceutical Society for the privilege of meeting in the Society's House.

On the motion of Mr. Forret a cordial vote of thanks was awarded to the retiring officebearers, and the Secretary acknowledged the vote.

Mr. McLaren proposed a vote of thanks to the Chairman, which was passed with acclamation, and the meeting then closed.

HALIFAX AND DISTRICT CHEMISTS' ASSOCIATION.

A meeting of the above Association was held at the Old Cock Hotel, Halifax, on May 29. There was a good attendance.

Mr. F. D. Crossley read a paper on "Patent Medicines and the Education of the Public," which caused a lengthy discussion.

After a vote of thanks to Mr. Crossley, the Association unanimously resolved to join the Federation of West Riding Associations.

PUBLIC DISPENSERS' ASSOCIATION.

A well-attended meeting was held on Wednesday, May 28, at St. Bride's Institute, Bride Lane, London, the President, Mr. W. Duff, in the chair.

The President stated that during the past week he had been invited to attend the

Dispensing Committee

of the Pharmaceutical Society, to express the Association's views on the inquiry that they were holding. He had attended, and with him Mr. Miller, St. Pancras. He was unable to give them a detailed report as to the proceedings, but was pleased to be able to tell them that he was very cordially received, and he had been asked to place before the committee a written statement setting forth what they considered necessary for the benefit of the Association and dispensers in general, more especially with regard to the question of qualification as affecting their status and financial position. This would be done.

The Council of the Association reported that they considered the time now ripe for the consideration of the qualification question, and for this purpose they proposed to alter Article 4 of their constitution, which states that—

"All dispensers in public institutions are eligible for membership" to: "That after this date no dispensers in public institutions are eligible for membership unless they hold a qualifying certificate of the Pharmaceutical Society."

Notice of motion being given, a special general meeting is to be called for June 11, to consider the question.

Mr. H. D. Kelf, Ph.C., then read an interesting paper on

Some Aspects of a Dispenser's Duties.

This was a general *résumé* of work which fell to the share of most public dispensers nowadays. Among some of the duties therein enumerated were "to take charge of the surgical instruments and attend operations if called upon, to carry out bacteriology, X-ray work, general research, photography, give lectures and demonstrations, microscopy, electricity, besides the keeping of elaborate stock books and general routine of dispensing and the making of certain galenical preparations." He laid stress upon the fact that a public dispenser's duties were particularly professional, and they were often looked upon by those in authority as merely dispensers. Mr. Kelf thought that in view of the above duties which they had to perform they ought to consider themselves a little above the ordinary retail member of the craft.

At the conclusion of the paper, a vote of thanks to Mr. Kelf was proposed and carried. After discussion the meeting adjourned.

PHOTOGRAPHIC NOTES.

BY A PHARMACEUTICAL CHEMIST.

Collodion Emulsion Lantern Slides.—On looking through the series of notes on this subject, the last of which appeared some weeks since, I find that I have not dealt with the after manipulations of reduction and intensification. As previously stated, one of the chief advantages of this method of producing lantern slides is the comparative ease with which these operations can be effected; and every lantern worker knows how frequently such treatment is necessary, subsequent to development, in the production of a satisfactory slide. Another advantage of the process is its adaptability to negatives of varying quality and density. A correctly exposed negative of good gradation and proper density will, of course, yield an equally good positive by any process. If the negative from which it is desired to produce a lantern transparency be over-exposed, thin and flat, or, on the other hand, under-exposed, and harsh in contrast, and of excessive density, it is difficult to obtain a good slide from it on an ordinary gelatin lantern plate in either case. In the process under consideration, the difficulties may be overcome much more readily—in the first case by resorting to intensification after a preliminary clearing by a reducer; and in the second by prolonging the exposure and using a very dilute developer, thus obtaining a thin and ghost-like image, reproducing all the detail existing in the negative, which can be intensified easily and quickly to the ordinary density.

Reduction is effected by applying, in the first place, a weak solution of iodine, conveniently prepared by adding 20 minims of the ordinary tincture to each ounce of distilled water. This partially converts the image into silver iodide, and may be applied locally to any over-dense parts by pouring especially upon them, or generally by flooding the whole of the film. After a slight rinse in water, the re-application of the potassium cyanide fixing solution dissolves out the silver iodide. The operation may be carefully repeated until the desired result is obtained.

The Intensifier is made as follows:—Alum; citric acid; pyrogallol, of each three grains; distilled water, 1 fluid ounce. When required for use a few drops of a solution of silver nitrate (20 grains to 1 fluid ounce) must be added. The action of this solution seems to rather resemble the building up of the image by development, and it may be used either before or after fixing. The quickness and readiness with which these operations can be performed are incredible to one who has only used gelatin dry plates, there being no prolonged washing between each process, so necessary when gelatin is employed. Varnishing the finished transparency is a necessity; it protects the thin and easily injured film, and imparts greater transparency and brilliancy. The ordinary transparency varnishes which can be applied without heat, may be used, but by far the best for the purpose is a solution of amber in chloroform. In the series of notes on this subject, I have endeavoured to give a practical and intelligible account of the unwashed collodion emulsion process; it is one which I have found much pleasure in practising, and in which I consider I have produced my best work in lantern slides. It is, moreover, a very interesting and suitable one for a pharmacist to take up, not alone for the sake of the resulting slides, but also for the experience it affords in photographic manipulations.

Masks and Binders for Lantern Slides.—Those who make their own lantern transparencies will find it convenient and, in many instances, conducive to better artistic arrangement of the picture, to make use, in place of the ordinary ready-made masks, of the black paper used in packing the unexposed plates. The portions to be used in this way should be selected, and cut in pieces, 3¼ inches in width, strips for masking can then be cut from these with the aid of the ordinary print trimming shape, of suitable widths for each transparency to secure the best pictorial effect. They may be fastened in position by a trace of mountant or flour paste at each corner. Immediately before binding a lantern slide, it is advisable to warm both the transparency and cover glass, which will lessen the tendency to an after condensation of moisture between them. The ordinary gummed binding strips are very convenient, but a very good substitute will be found in pink capping paper, which can be neatly cut into strips adjusted in width to the thickness of the glasses, and applied with flour paste. This simple method of binding gives a neat and effective finish to a lantern slide with a black paper mask. Round cornered or cushion-shaped masks are now discarded by good workers—one can scarcely understand why they were ever popular—but possibly it may be due to the fact that many of the cheaper lantern objectives, which are often deficient in flatness of field, had this defect rendered less apparent by masking off the corners.

The Cooke Lens.—Messrs. Taylor, Taylor, and Hobson announce a very convenient modification in the mounting of this lens, which will be especially appreciated by users of hand cameras of the fixed focus type. The front ring of the lens mount has engraved upon it a scale of distances in yards, and the turning of this ring alters the focal length of the lens, so that focussing can be done perfectly in rigid cameras, without bellows or other means of extension. Messrs. Taylor, Taylor, and Hobson claim that this arrangement not only tends to simplicity in camera construction, but also ensures constant parallelism of the sensitive plate and the lens flange, a matter of importance when anastigmats of wide angular aperture are used.

The Metol-Quinol Developer.—This very popular form of developer, in the form of a single solution, is not entirely without its disadvantages, one of the principal difficulties being the comparative insolubility of metol, and the consequent tendency to crystallise out when prepared in a concentrated solution; and as recently pointed out by a correspondent, a reaction appears to take place between these substances in solution, which results in the production of a more insoluble compound than either. It is better, therefore, not to attempt to prepare this for sale in a more concentrated form than of double strength, and the proportion of metol should not be greater than half that of the quinol. If a more concentrated single solution developer be required, the better course is to resort to a more soluble agent, and one which fulfils the requirement admirably, being very soluble, very similar in properties to the above compound, and amenable to the use of bromide as a restrainer, is adurol, a suitable formula for the preparation of which was given in the *P.J.* Supplement of March 22 last.

The Holy Shroud.—Some considerable excitement has been caused, especially in Paris, by the alleged discovery that the stains upon the holy shroud, one of the treasured relics in the keeping of the ecclesiastical authorities of Turin, bear a relation to a photographic negative, a positive print from which gives in fine detail a perfect impression of the body which it enclosed. So perfect is this impression that one who has seen the photographs said to be so produced states that they are "impossible of imitation by the most skilful painter." The whole thing appears at once so extremely improbable, and so likely to be merely a sensational fraud, that it seems scarcely worthy of notice were it not that a scientific interpretation has been sought to account for it. This interpretation is very curious, and is apparently as follows:—A French scientist is said to have made the discovery that the body of a person, having died in the sunlight after torture, will emit strongly alkaline vapours; which vapours have in this case affected the preservatives employed in the fabric, producing stains, and so converting the shroud into a kind of negative impression. It would be interesting to know how such a discovery was made. One would imagine it to be a very difficult one to verify. Surely it must be impossible for any practical photographer, whether acquainted with the science of his practice or not, to think that photographs such as those described can have been produced in the manner suggested; and I am inclined to think the matter has either been very greatly exaggerated, or an imposture has been attempted.

COMMERCIAL INTELLIGENCE.*

Indian Opium in China.—Reporting on the trade of Ningpo (China) for the year 1901, Consul Wilkinson remarks that the importation of Indian opium continues to decline, while that of Persian has come practically to an end. One cause of the decline, he states, is doubtless to be found in the diversion of the supply of the west and north of the province to Hangchow and its sub-station Kashing, but another is the increased cost of the foreign drug as compared with the native article. Some of the latter reaches Ningpo, through various channels, from Ssuch'uan and Yunnan, but the greater part of it is produced in the province itself. There are no indications, Mr. Wilkinson remarks, that the practice of opium-smoking is falling into disuse, but, on the other hand, it cannot, he thinks, be said that it ever assumed very grave proportions at Ningpo. Consul Ker, reporting on the trade of Wuhu for the year 1901, states that the import of Indian opium was somewhat below the average, and a still more marked decrease appears in the returns of native opium, which stand at 533 lbs., valued at £224, instead of 7,797 lbs., valued at £3,120. It must be remembered, however, that the amount figuring in the customs returns bears but a very small proportion to the quantities of native opium which come to the port in native junks, and do not report to the Imperial Maritime Custom House. Mr. Ker gives the following comparative estimate of the consumption for 1900-1901, which has been obtained from native sources, but he cannot vouch for its accuracy:—

—	Quantity.	
	1900. lbs.	1901. lbs.
Szechuan opium	400,000	466,666
Kiangsu and North Anhui opium	40,000	66,666
Yunnan opium	8,000	13,334
Total	448,000	546,666

The foreign opium imported into Wuhu during the years 1901-1900 is given as follows:—

—	1901.		1900.	
	Quantity lbs.	Value £	Quantity lbs.	Value £
Malwa opium	263,733	205,007	326,866	280,410
Patna opium	320	260	160	206
Total opium	264,053	205,267	327,026	280,616

Persian Opium Trade.—Lieut.-Colonel C. A. Kemball, His Majesty's Consul-General at Bushire, reporting on the trade and commerce of the Persian Gulf for the year 1901, referring to the imports, remarks that an increase of £4,576 shown in the imports of drugs and medicines is not real, but is specially due to the shipment of opium made abroad having been returned on account of the drug being largely adulterated, and not suited to the requirements of the market. Referring to the exports, he states that the decrease in opium was £35,372, and he goes on to explain that, prices in China having fallen heavily, merchants were unwilling to part with their stock, and a large quantity has, consequently, been accumulated in the country. It is stated that the fall in price is principally due to adulteration of the drug being carried on to a considerable extent, and unless some supervision is exercised in its preparation, Lieut.-Colonel Kemball thinks, Persian opium may eventually be discredited in China. The attention shown by Japan to Persian opium, he remarks, is likely to promote exportation to that country. Two Japanese gentlemen, experts in opium, are said to have visited the principal opium centres in Persia to study the conditions of the trade and methods of preparation of the drug.

Purchasers of Orris Root are advised by Consul Carmichael (Leghorn) to take advantage of the present low prices to replenish their stocks, as he thinks it probable that there will soon be an upward move in prices. Last year's crop of orris root, he states, was smaller than that of 1900, many growers, with the prices now ruling, and considering the expensive process of manipulation before the root is fit for export, not finding it worth while to gather the root. The demand has, he states, been quiet, and prices gradually receded until at present they stand at 53 to 55 lire per 100 kilos for good qualities.

OBITUARY.

Bogie.—On May 20, Thomas Speedie Bogie, Chemist and Druggist, Melrose. Aged 58. Mr. Bogie went to Melrose about thirty years ago from Edinburgh, and has since carried on a successful business as a chemist and druggist at Exchange Buildings. He was highly esteemed in the district, having taken an active interest in local public affairs. He was chairman of the Melrose Parish School Board for many years, and when Melrose was formed into a municipality Mr. Bogie was appointed a Commissioner at the first election, and has since been regularly re-elected to the Town Council. He was a member of the former Melrose Parochial Board, and did a large amount of work in connection with poor-law administration in the district. In politics he was a Liberal, and an active member of the committee of the Melrose Liberal Association.

Frater.—On May 22, Mark W. Frater, Chemist and Druggist, East Ham. Aged 48.

Littlefair.—On June 1, Thomas Littlefair, Chemist and Druggist, Manchester. Aged 34.

Robinson.—On May 24, Joseph Robinson, Chemist and Druggist, Stanley (Durham). Aged 27. Mr. Robinson was a member of the Pharmaceutical Society and the son of Mr. Joseph Robinson, Divisional Secretary for Stanley. He was highly popular in Stanley and Annfield Plain, being a strong supporter of several local cricket clubs, and an official of Stanley Church Institute.

Williamson.—On June 1, Edward Williamson, Chemist and Druggist, Darlington. Aged 71.

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* From Consular Reports and other official sources.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

KO-SAM.

E. Heckel and F. Schlagdenhauffen have determined that this Chinese remedy for dysentery is composed of the seeds of *Brucea sumatrana*, N.O. Simarubaceæ. In addition to fixed oil, the seeds contain quassin, saponin, and another bitter principle, which is not identical with quassin. Bertrand and Phisalix consider that the active principle is a glucoside, soluble in water and in dilute alcohol, which they call kosamin.—*Pharm. Zeit.* **47**, 170.

NEW SYNTHESIS OF HYDRAZOIC ACID.

Tanatar describes an elegant synthesis of hydrazoic acid by treating a mixture of hydrazine sulphate and hydroxylamine hydrochloride in acid solution with an oxidising agent. On distilling, the hydrazoic acid passes over with the distillate, hydrogen peroxide and chromic acid appear to give the best yields, which in no case exceed 30 per cent. of the theoretical amounts. Dihydroxylamine is probably the first product of oxidation, which then condenses with the hydrazine and is further oxidised to N_3H. The only purely inorganic syntheses of acid formerly known were those of Wislicenus from sodium amide and nitrous oxide, and of Tanatar, from hydrazine and nitrogen chloride.—*Berichte*, **35**, 1810, through *Nature*.

FORMATION OF PARAFFINS.

P. Sabatier and J. B. Senderens, by their researches on the action of reduced nickel, iron, and other metals upon hydrocarbons, have now placed the "chemical" theory of petroleum formation on a firm experimental basis. By the direct hydrogenation of acetylene in the presence of nickel they have obtained liquid mixtures of hydrocarbons, which can be made to correspond either with American or Caucasian petroleum by varying the conditions of the experiment. To account for the formation of petroleum it is thus sufficient to admit that there are in the depths of the earth free alkali metals and metallic carbides which, in contact with water, give rise to mixtures of hydrogen and hydrocarbons. Those gases encounter nickel, cobalt, or iron in a finely divided state, and thus give rise to the mixtures of hydrocarbons forming natural petroleum.—*Nature*, **66**, 138.

ANTISEPTIC PROPERTIES OF ACIDS.

Dr. M. Bial has recently carried out some interesting experiments on the antiseptic properties of dilute solutions of acids, the observations being carried out with yeast cells and measurements of the retarding action of different acids on the development of the cells being made by observing the amount of carbon dioxide liberated from a solution of grape sugar. It is found that the concentrations of the solutions, which are just sufficient to check completely the development of the cells, are much smaller in the case of the strong acids like hydrochloric and sulphuric acids than in the case of weak acids such as acetic and butyric acids. In fact, the results lead to the conclusion that the antiseptic power is essentially determined by the hydrogen ion which is contained in the acid solutions, and the electrolytic dissociation theory is able to account for the observed phenomena in a satisfactory manner. As is required by that theory it is found that the addition of neutral acetates to a solution of acetic acid diminishes the antiseptic power of the acid, the concentration of the active component of the solution, the hydrogen ion, being under those circumstances reduced to a much smaller value.—*Zeitschrift für physikalische Chemie*, through *Nature*, **66**, 137.

CASAMIROA EDULIS.

Attention is drawn to the seeds of *Casamiroa edulis*, a Rutaceous plant indigenous to Mexico, known as *Zabote sonifero* and *Zabote blanco*, as possibly being of therapeutic and chemical interest. Hernandez, the early Spanish writer, describes the seeds, eaten raw, as being toxic to man and animals. Roasted and applied to wounds, they are stated to act as a most efficient healing and antiseptic agent. Internally they produce sleep. José Sanchez in 1893 reported the presence of a crystalline principle in the seeds, which appears to be an alkaloid, and also two resins, a volatile oil, fat, glucose and starch.—*Merck's Report*, 1901, 179.

NEW SYNTHESIS OF FORMIC ACID.

By heating pure potassium hydride in a current of carbonic acid gas, H. Moissan has succeeded in effecting the formation of potassium formate, which when decomposed and distilled, yields pure formic acid. This combination does not take place at – 80°, it commences at about 15° C.; at 450° products of polymerisation are formed, indicating that the original body is altered at that temperature. If the hydride be heated in sealed tubes to 225° C. in an atmosphere of CO_2, that gas is entirely absorbed in five hours; when all the CO_2 has combined, a small quantity of the hydride is dissociated. The compound formed is also potassium formate. By heating bright metallic threads of metallic potassium in a mixture of hydrogen and carbonic oxide a mixture of carbon, potassium hydride and potassium formate is obtained, the reaction being represented by the equation $2CO + KH = HCOOK + C$. If potassium hydride be heated in a sealed tube with CO to a temperature of 150°, only a small amount of the gas is absorbed, since the superficial formation of crystals of potassium formate on the hydride arrests the action.—*Comptes rend.*, **134**, 261.

MACROZYMASES AND MICROZYMASES.

Raphael Dubois finds that the formation of the well-known purple colour by the contents of certain glands of the mollusc *Murex brandaris* is due to granular organised bodies which, from their comparative large size, may be separated by simple filtration through paper, and are therefore named macrozymases by the author. If the dissected out glands of the shellfish be crushed with sand and absolute alcohol, in the dark, filtered, the filtrate exposed to the light and again filtered and evaporated, it will be found that that paper impregnated with the extract will not develop any purple colour when exposed to sunlight even when moistened with water. If the insoluble matter left on the first filter be then macerated with chloroform water in the dark, filtered, and the insoluble matter suspended in glycerin and water, a turbid extract will be obtained, which when applied to the paper impregnated with the first alcoholic extract, at once develops the fine purple colour on exposure to sunlight. If the glycerin extract be heated to 120° C. in an autoclave, its activity is destroyed and no colour reaction is obtained. Microscopic examination of the glycerin extract shows it to contain vast numbers of granular elements similar to those found by the author in the light-emitting organs of certain luminous animals. It is suggested that the so-called "soluble" ferments are not, in fact, solutions of the active substance, but consist merely of suspensions of extremely minute bioproteonic granules. To these the author proposes to give the name microzymases to distinguish them from the larger macrozymases, such as the granules described above. For these the name purpurase is suggested, and purpurin for the body or bodies with which it reacts; in an analogous manner, the granular ferment of the light-bearing organs has been named luciferase and its corresponding light-producing medium luciferin.—*Comptes rend.*, **134**, 245.

FALSE IPECACUANHAS. Gnégneu has examined a false ipecacuanha from French Guiana, and found it to consist of two species of *Ionidium*, viz., *I. parviflorum*, Vent., and *I. ipecacuanha*, var. *indecora*. He groups the false ipecacuanha roots furnished by the natural order Violaceæ into two groups:—(1) Those with pericyclic fibres (*I. parviflorum*); and (2) those with pericyclic fibres (*I. ipecacuanha*, var. *indecora*).—*Bull. d s Sc. Pharmacologiques*, **4**, 95.

SYRUPUS FERRI IODIDI. Euclid Snow advocates the use of sodium hyposulphite to restore discoloured syrup of ferrous iodide to its original colour. He dissolves 20 grains of the hyposulphite to the ounce, and adds just sufficient of the solution to restore the natural colour, or the solid salt may be dissolved directly in the syrup with the aid of a mortar. The taste is not altered, and the syrup remains neutral. Physicians who have used a syrup which has been treated in this way state they have observed no ill-effects from its use, and consider that the therapeutic action is in no way impaired.—*Bulletin of Pharmacy*, **16**, 59.

SCOPOLA OR BELLADONNA. A. B. Prescott and J. O. Schlotterbeck have conducted a series of careful experiments on the alkaloids obtained from scopola and belladonna, with a view to determining whether the former drug may be used in place of the latter in the manufacture of plasters and other preparations. They have convinced themselves that the predominating alkaloid of scopola is hyoscyamine, and that the crude drug is almost entirely dependent on that alkaloid for its activity. So far they have not isolated atropine from this drug, but think it possible that it may appear in the final residues. They consider that belladonna root contains hyoscyamine in greater abundance than any other alkaloid, and varying proportions of atropine. Considering the well-known instability of hyoscyamine, they think it highly probable that scopola preparations of one manufacture may contain as much atropine as similar belladonna preparations from another source. The physiological action of the two alkaloids is being investigated in order to establish beyond doubt whether there be any marked difference from a pharmacological point of view.—*Bulletin of Pharmacy*, **16**, 55.

STAINING FOR NUCLEI. It is still a matter of opinion whether the specialised body found in the cells of Bacteria and the Blue-green Algæ is, or is not, a nucleus. The problem resolves itself into one of staining, and making deductions from the result. Robert Hegler in a posthumous paper maintains the nuclear character of this body; his methods, therefore, are of considerable interest, more especially as he did not make use of the ordinary reagents. The fixing solution consisted of 7 parts of a saturated aqueous solution of sulphur dioxide, mixed with 93 parts of 94 per cent. alcohol. After this iodine or methyl-blue were used for staining. But better results were obtained with a complicated hæmatoxylin mixture. To a 10 per cent. solution of ammonia alum is added, one-third part of alcohol and glycerin, and to this again one-tenth part of a saturated alcoholic solution of hæmatoxylin. This must be left for some time, when 10 parts are mixed with 100 parts of 1 per cent. solution of formalin, and in this stain the algæ are kept for twenty-four hours. After thorough washing to get rid of the formalin, differentiation is obtained by using another stain, made up of 1 part of 50 per cent. alcoholic solution of picric acid and 1 part of 94 per cent. alcohol. The picric acid is washed out with 70 per cent. alcohol.—*Pringsheim's Jahrbuch*, **36**, 229.

THE SOLUBILITIES OF CHEMICAL SUBSTANCES MENTIONED IN THE BRITISH PHARMACOPŒIA (1898).*

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and
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Section III.

Acidum Arseniosum.

In broken masses, opaque without and vitreous within.

The sample complied with the qualitative tests of the Pharmacopœia, giving no reaction with the official test for arsenious sulphide. This test reads as follows:—"It should dissolve completely in solution of ammonia, and the resulting liquid, when diluted with an equal volume of water, and acidulated with hydrochloric acid, should not have a yellow colour." Owing to the possibility that minute traces of sulphide might not be detected by this test, a comparison was made with the nitro-prusside test for sulphides. The sample for this, as for the other tests, was brought into solution by boiling with sodium bicarbonate and water. On adding to a portion of this solution 5 per cent. aqueous sodium nitro-prusside solution no purple colour was produced. We were led to try this test because of its extreme delicacy in the detection of soluble sulphides. We have prepared a sample of arsenious oxide containing added sulphide for trying this test, which furnishes an excellent illustration of the necessity for giving precise directions in certain cases of qualitative testing. The following experiments will make this clear. A mixture was prepared of realgar and arsenious acid, containing 0·001 Gm. of realgar in 1 Gm.

(*a*) 1 Gm. of above impure arsenious acid (=0·001 Gm. realgar), boiled for five minutes with 5 Gm. sodium bicarbonate and 100 C.c. water, and filtered gave no purple coloration with sodium nitro-prusside.

(*b*) The same, boiled for fifteen minutes, gave a very faint fleeting indication of purple. This was useless.

(*c*) The same, using 50 C.c. of water instead of 100 C.c. boiled for fifteen minutes. Faint, fleeting, purple colour. Unsatisfactory.

(*d*) The same, using 25 C.c. of water and boiled for fifteen minutes. Distinct purple colour after about one minute, lasting for about two minutes. Satisfactory.

For comparison, the official test with ammonia and hydrochloric acid was tried on the contaminated arsenious acid; 1 Gm. was digested for twenty minutes with 10 C.c. of the official liquor ammoniæ. On filtering, adding an equal volume of distilled water and acidulating with hydrochloric acid the solution became but faintly yellow. The test so carried out is not as distinctive as that with sodium nitro-prusside.

We recommend the following wording for this test:—

"1 Gm. (of the arsenious acid) raised to the boiling point with 5 Gm. of sodium bicarbonate and 25 C.c. of distilled water, digested on a water-bath for twenty minutes and filtered, should not give when cold a purple coloration with a few drops of (a 5 per cent.) solution of sodium nitro-prusside within two minutes."

This test detects the presence of at least 0·001 Gm. of sulphide of arsenium in 1 Gm. of the sample tested.

Realgar was chosen as impurity because of its crystalline character; it was thought that an impure arsenious acid would contain sulphide in the crystalline form, if at all. Owing to its crystalline character, however, the realgar did not entirely dissolve in the liquid in the time stated. Were it present in an amorphous state probably more of the sulphide would be dissolved, and so the test would be more delicate.

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* Communication from the Research Laboratory of the Pharmaceutical Society of Great Britain.

With regard to the sodium nitro-prusside test it is of interest to note that according to Valentin[1] this substance does not affect sulphuretted hydrogen, but gives a fine purple colour with the merest traces of soluble sulphides. The colour does not show in the presence of free caustic alkalies. We find that the colour does not always appear immediately, and that it is not permanent.

The sample was next quantitatively tested with iodine and found to contain 100·62 per cent. As_2O_3. According to Proctor[2] a high result is due to the presence of some suboxide in the sample. In performing this test according to the official directions the arsenious acid goes but slowly into solution and the heat employed converts a considerable quantity of bicarbonate into carbonate, which is afterwards removed by the addition of hydrochloric acid. We prefer to dissolve the arsenious acid in weak solution of potassium hydroxide, by the aid of heat, then add one drop of solution of methyl orange and enough hydrochloric acid to render the solution faintly acid. When cold an excess of sodium bicarbonate is added and the solution is then titrated with iodine solution, using starch mucilage as indicator. By this method solution is quickly effected and the production of carbonate avoided.

The published figures for the solubility of arsenious acid show great variation. Probably this is due, in part, to the very slow rate at which solution takes place and in part to the fact that the amorphous variety of arsenious acid dissolves more rapidly than the crystalline. Buchner[3] who made careful experiments on this subject found that one part of the crystalline arsenious acid dissolved in 355 parts of water in one day at 15° C., while one part of the amorphous dissolved in 108 parts under the same conditions.

Winkler's results are as follows:—

Time.	Crystalline.	Amorphous.
One week	1 in 59·7	1 in 56·7
Two weeks	1 in 56·3	1 in 58·3
Two and a quarter years	1 in 58·4	1 in 58·5

In determining the solubility of this substance, we thought it well to set on samples of both the crystalline and amorphous varieties. The arsenious acid was therefore crushed, and pieces of each variety picked out and powdered. Portions of each variety were then shaken with water and with hydrochloric acid solution of the same strength as the official liquor arsenici hydrochloricus. The latter solvent was chosen in order to compare the solubility of the substance in aqueous and in hydrochloric acid solution. The solutions were assayed by means of iodine in the usual way.

Solubility in Water.

(*a*) Crystalline arsenious acid.

Time.	Temperature.	Solubility by Assay.
Seven days	61	1 in 91·99[4]
Twenty-two days	60·5	1 in 71·10
Twenty-four days	61	1 in 71·03

(*b*) Amorphous arsenious acid.

Time.	Temperature.	Solubility by Assay.
Seven days	61	1 in 68·87
Twenty-two days	60·5	1 in 62·69
Twenty-four days	61	1 in 62·68

After shaking for twenty-four days, therefore, the solubility of the crystalline variety was found to be 1 in 71, and that of the amorphous, 1 in 63. Probably our figures for the crystalline variety would have approached the amorphous more nearly still had we continued the process of solution for a greater length of time, but this we considered unnecessary.

Solubility in Weak Hydrochloric Acid Solution.

(*a*) Crystalline arsenious acid.

Time.	Temperature.	Solubility by Assay.
Seven days	61	1 in 75·59
Twenty-two days	60·5	1 in 69·53
Twenty-four days	61	1 in 69·58

(*b*) Amorphous arsenious acid.

Time.	Temperature.	Solubility by Assay.
Seven days	61	1 in 61·78
Twenty-two days	60·5	1 in 59·31
Twenty-four days	61	1 in 59·53

The solubility is, therefore, not appreciably greater in this solvent than it is in distilled water.

Results.

Crystalline Arsenious Acid.—In water at 61° F. 1 in 71. In weak hydrochloric acid at 61° F., 1 in 70.

Amorphous Arsenious Acid.—In water at 61° F., 1 in 63. In weak hydrochloric acid at 61° F., 1 in 61.

Comparison with Authoritative Statements:—

British Pharmacopœia	1 in 100
United States Pharmacopœia, very slowly,	
Porcelain variety	1 in 80
Glassy variety	1 in 30
Winkler, after three weeks, crystalline	1 in 56·3
" " " amorphous	1 in 58·3
" after 2¼ years, crystalline	1 in 58·4
" " " amorphous	1 in 58·5

Remarks.—We would suggest the introduction of the nitroprusside test for sulphide, and that for titration the arsenious acid be dissolved in caustic potash, the solution being afterwards neutralised by hydrochloric acid and made alkaline by sodium bicarbonate.

Acidum Boricum.

In colourless, lamellar, pearly crystals.

Examined qualitatively, the acid was found to be free from the impurities enumerated in the Pharmacopœia, except a trace of sulphate, which is allowed. The amount of sulphate present appeared to be about ½ per cent., as judged by comparison with the behaviour of a known solution of sulphate to barium chloride and hydrochloric acid.

Alcock has drawn attention[5] to a sample of boric acid containing 9 per cent. of borax, which he detected by its not dissolving in alcohol.

One official test reads:—"The solution in alcohol burns with a flame tinged with green, especially when the solution is acidified with sulphuric acid."

As the usual object of the sulphuric acid in this test is to liberate boric acid from a borate, the addition seems to be unnecessary in testing boric acid.

The official turmeric test reads as follows:—"Turmeric paper moistened with an aqueous solution, even when slightly acidulated with hydrochloric acid, becomes brownish-red on gently drying, and this colour changes to a greenish-black if solution of potassium hydroxide be added." Using for this test a 5 per cent. solution of boric acid (without hydrochloric acid) the brownish-red colour was too faint to be of much service. The colour produced by potash on the paper previously treated with boric acid differed in no way from that produced without the intervention of boric acid; whereas, according to the Pharmacopœia in the former case a greenish-black colour should be produced. If, however, the boric acid solution be acidified with hydrochloric acid, and the paper saturated therewith a distinc brownish-red colour is produced. Hence there is no necessity for the words, "even when," in the official text, inasmuch as the presence of the hydrochloric acid is desirable.

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[1] Valentin's 'Practical Chemistry,' 9th edition, p. 145.

[2] 'Pharmaceutical Testing,' 2nd edition, p. 19.

[3] Comey's 'Dictionary of Solubilities,' p. 29.

[4] We have adopted a uniform method of expressing solubilities, viz., 1 gramme of substance in x cubic centimetres of solvent.

[5] *Pharmaceutical Journal*, 1899, Vol. II., 514.

The Pharmacopœia directs "careful heating" to be employed, but Power has already pointed out[6] that it is only by strongly igniting that boric acid loses 43·6 per cent. of its weight.

The boric acid was quantitatively determined by means of Thomson's method.[7] Quite recently this method has been favourably commented on by Barrie.[8] We also have obtained good results from its use. In performing it the boric acid solution is mixed with enough glycerin to form one-third of the final volume; a drop or two of phenol-phthalein being added, the liquid is titrated with standard alkali until a faint pink colour is produced. The reaction is complete when the boric acid is converted into metaborate. We found the sample to contain 99·78 per cent. H_3BO_3 by this method.

Solubility in Water.

Time.	Temperature.	Specific Gravity.	Solubility by Assay.
Eight days	61·5	1·0169	1 in 24·4
Three months	60·0	1·0118	1 in 25·0

Result.—Solubility in water, 1 in 25 at 60° F.

Comparison with Authoritative Statements.—

British Pharmacopœia	1 in 30
United States ,,	1 in 25·6
German ,,	1 in 25 (slowly)

Remarks.—We suggest that the words "strongly ignited," be substituted for "carefully heated"; that the words "even when," be deleted from the turmeric test, and that the words, "especially when the solution is acidified with sulphuric acid," be deleted.

Acidum Chromicum.

In moist crimson acicular crystals.

The pharmacopœial qualitative tests were tried. The first reads:—"At a temperature of 192° C. it melts, and at a still higher temperature decomposes with the evolution of oxygen gas, leaving a greenish-black residue, which should yield little or nothing to water (limit of sulphates)."

We found the residue to be steel-black in colour. On extracting with water and testing with barium chloride and hydrochloric acid, we found less than 1/10 per cent. of sulphates to be present. It is desirable that this watery extract should be so tested for sulphates.

"Warmed with hydrochloric acid chlorine is evolved." This official test refers to the solid substance, which gives off chlorine when warmed with strong hydrochloric acid. With a 5 per cent. solution of chromic acid neither weak nor strong hydrochloric acid evolves chlorine.

"Mixed with cold alcohol (90 per cent.) aldehyde is produced, and a green residue remains." The solid substance treated with cold alcohol does give off aldehyde, but the resulting liquid is brownish red. The Pharmacopœia speaks of "a green residue." The alcohol was therefore allowed to evaporate, when the residue was found to be red-brown in colour. According to Schmidt,[9] when completely reduced by alcohol, green oxide of chromium is obtained, but when the reduction is incomplete brown compounds containing more oxygen are produced, *e.g.*, $Cr{\cdot}(Cr{\cdot}O_3)_2$ (chromium chromate), which is black. Our conclusion is that on treatment with cold alcohol the reduction is incomplete, and we, therefore, suggest the alteration of this test. It requires the application of heat and the addition of a little dilute hydrochloric acid to give a green solution. The test might, therefore, read:—"When the substance is mixed with alcohol (90 per cent.) and a little dilute hydrochloric acid aldehyde is evolved on heating and the solution becomes green in colour."

The recommendation has been made[10] that lead and iron should be tested for, as they are occasionally present in traces in the commercial drug. These impurities were, therefore, sought in the ordinary way, and proved to be absent. In looking for iron a difficulty arose which is worth mentioning. The aqueous solution was treated with ammonia until alkaline and then with ammonium sulphide. The green precipitate was filtered off, and the filtrate was found to be ruby-red in colour. This colour is due to the formation of a chromamine, produced by an excess of ammonia and ammonium chloride acting on the chromium hydroxide. This substance, according to Ramsay, has the formula $Cr{\cdot}Cl_3$, $4NH_3{\cdot}H_2O$. It may be removed from solution by prolonged boiling, when a beautiful greenish-blue precipitate forms, leaving a water-white liquid.

Solubility in Water.

The strength of the solution was determined by titration with ferrous ammonium sulphate in the usual way.

Time.	Temperature.	Specific Gravity.	Solubility by Assay.
Three days	62	1·7065	1 in 0·599
Eight days	61·5	1·7100	1 in 0·594

Result.—Solubility in water, 1 in 0·59 at 61·5° F.

Comparison with Authoritative Statements:—

British Pharmacopœia	Very soluble
United States ,,	,, ,,
German ,,	Not given

Remarks.—It is desirable to apply a chemical test for sulphates to the aqueous extract of the residue left on ignition. We would also recommend the alteration of the reduction test with alcohol as already suggested.

(*To be continued.*)

THE ACETIC ACID TEST FOR OIL OF TURPENTINE.

BY P. W. SQUIRE AND C. M. CAINES.

The recent controversy on the solubility of oil of turpentine in glacial acetic acid appears to have commenced with a note by Mr. F. H. Alcock, in August, 1899 (*P.J.* [4]. **9**, 201), when he suggested that the Pharmacopœia tests for the strength of glacial acetic acid were unsatisfactory, specific gravity, melting point, and even the total acidity being less delicate than a mixture of equal volumes of glacial acetic acid and oil of turpentine.

Subsequently Mr. William Duncan (*P.J.* [4], **12**, 387) found that some samples of oil of turpentine were soluble in glacial acetic acid and others were not, but he remarks that "the acetic acid must be up to the standard as any dilution interferes with the test." Mr. Thomas Dunlop, in a paper read before the evening meeting in Edinburgh (*P.J.* [4], **14**, 344) stated that he had tested his stock of oil of turpentine with glacial acetic acid, but "always with negative results," even although the acid responded to the specific gravity and total acid tests. In the discussion which ensued, some speakers agreed that the suggested turpentine test was of no use because it gave variable results, whilst others had never had any difficulty in obtaining a clear solution on mixing the two liquids in equal volumes. The discussion was continued (*P.J.* [4], **14**, 393, 415, 436, 465), some suggesting that the difference in results was due to decomposition after mixing, and others to the influence of temperature and pressure.

As we had always obtained a clear solution with such a mixture when testing our stock at all seasons of the year, we wrote to Mr. Dunlop and asked him to let us have some of the oil of turpentine with which he had obtained such varying results, and he kindly acceded to our request. This sample gave with the glacial acetic acid of our stock a perfect solution, whether the mixture was cooled down to 50° or warmed up to 70° F. It was clear, therefore, that the oil of turpentine was not the cause of the difference in results, because Mr. Dunlop's oil behaved in the same manner as our own samples. The variance, therefore, had to be looked for in the glacial acetic acid, and a series of experiments were instituted with the object of determining within what limits the strength of acid could vary and still yield a clear solution with the oil.

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[6] *Pharmaceutical Journal*, 1900, Vol. II., p. 146.

[7] Sutton's 'Volumetric Analysis,' 7th Edition, p. 92.

[8] *Pharmaceutical Journal*, 1902, Vol. I., p. 345.

[9] Schmidt's 'Pharmaceutische Chemie,' 3rd ed., Vol. I., p. 833.

[10] *B. and C.D.*, XXXIII., p. 516.

Eight samples of oil of turpentine were procured from different sources, and are described in the table:—

Specific Gravity at 15·5 C.	Distillation.	Residue.	Colour.
A. 0·865	90 per cent. between 155°-160° C. 99 per cent. between 155°-165° C.	Trace.	Dark yellow.
B. 0·869	85 per cent. between 153°-160° C. 99 per cent. between 153°-170° C.	Trace.	Dark yellow.
C. 0·865	90 per cent. between 160°-165° C. 99 per cent. between 160°-170° C.	Trace.	Yellow.
D. 0·867	98 per cent. between 150°-155° C.	Trace.	Dark yellow.
E. 0·871	70 per cent. between 160°-165° C. 97 per cent. between 160°-170° C.	Trace.	Yellow.
F. (French) 0·893	Distillation not done.		
G. (German) 0·867	Distillation not done.		
H. 0·878	99 per cent. between 155°-170° C.	Trace.	Yellow.

When the distillation was finished, the residues were in each case mixed at 15·5° C. (=60° F.), with an equal volume of glacial acetic acid (99½ per cent.), and although the mixtures were kept for over a week no instance of separation occurred.

Four strengths of glacial acetic acid were prepared, containing respectively 100 per cent., 99·5 per cent., 98·9 per cent., and 98·3 per cent., as determined by titration with volumetric solution of sodium hydroxide, using phenol-phthalein as the indicator. In making the experiments, equal volumes (5 C.c.) of each (oil and acid) were poured into a corked vial and shaken. The temperature in each case was between 58° and 62° F. The results are shown in the table:—

Sample.	Glacial Acetic Acid Titrating 16·8 C.c. N/N NaHO = 100·0 per cent. $C_2H_4O_2$.	Glacial Acetic Acid Titrating 16·7 C.c. N/N NaHO = 99·5 per cent. $C_2H_4O_2$.	Glacial Acetic Acid Titrating 16·60 C.c. N/N NaHO = 98·9 per cent. $C_2H_4O_2$.	Glacial Acetic Acid Titrating 16·5 C.c. N/N NaHO = 98·3 per cent.
A.	Clear	Clear	Clear and then separated	Separated
B.	Clear	Clear	Clear and then separated	Separated
C.	Clear	Clear	Separated after being clear at first	Separated
D.	Clear	Clear	Clear	Separated
E.	Clear	Clear	Clear	Separated
F. (French)	Clear	Clear	Clear	Clear
G. (German)	Clear	Clear	Separated	Separated
H.	Clear	Clear	Clear	Separated

It will be noticed that an acid which required 16·8 C.c. gave a clear solution with all the samples; an acid requiring 16·7 also gave a clear solution; an acid requiring 16·6 was clear with some samples and turbid with others; an acid requiring 16·5 separated in nearly every instance. It will, therefore, be noticed that the Pharmacopœia figure of 16·6 is just on the line which gives results varying with different samples of oil.

The B.P. statement that oil of turpentine is soluble in its own volume of glacial acetic acid was clearly taken from the United States Pharmacopœia, 1890, but whereas the Acidum Aceticum Glaciale, B.P., should require exactly 16·6 C.c. of the volumetric solution of sodium hydroxide, the U.S.P. specifies that it should require not less than 16·5 (but may require more). Presumably an acid which requires more than 16·6 and, therefore, one which mixes readily with an equal volume of oil of turpentine is above B.P. strength, but it would be included in the U.S.P. strength.

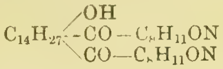
The conclusion to be drawn from the above is that an acid conforming strictly to the B.P. titration test (which requires a definite figure) cannot be expected to form a clear solution with all samples of oil of turpentine when mixed in equal volumes, but that commercial samples of glacial acetic acid which require more than the B.P. figure will mix readily without subsequent separation, and most of the acids which we have seen give a higher figure than the B.P. With such samples of oil of turpentine as we have yet seen, the mixture of any of them in equal volumes with glacial acetic acid (temp. 58°-62° F.) becomes a delicate test for a strength of 99·5 per cent. acid or stronger.

NEW REMEDIES.

Cod Liver Oil and Lecithine in Rickets.—G. Carrière has obtained the best results in the experimental treatment of five cases of rachitis with cod liver oil and lecithine. The oil employed was the pale variety, and contained 0·5 per cent. of lecithine of egg. The dose was from one to four tablespoonfuls a day, according to the age of the patient. In all five cases treated, improvement was marked after one month, and was progressively maintained, until after four to six months, the disease appeared to have been arrested and cured, without any relapse, up to the present time.—*Comptes rend.*, **134**, 860.

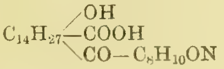
Vioform.—Iodo-chloroxy quinoline, or vioform, is pronounced by Krecke to be superior to iodoform, since it is not only equally efficacious, if not more so, but possesses the great advantage of being odourless, and produces no ill effects when administered subcutaneously in large doses. It is best applied in the form of the following emulsion:—Vioform, 50; glycerin, 200; sterilised water, 200; alcohol, 100. *Misce s. a.* Sterilised gauze is moistened with the emulsion, and applied to the wound.—*Muench. Med. Woch.*, **33**, 1,312.

Phenetidides of Agaric Acid.—J. D. Riedel has obtained two phenetidides of agaric acid, in which the anhydrotic properties of the acid are combined with the antipyretic effects of para-phenetidine. The combinations are obtained by heating the components together in an open vessel or in an autoclave. Thus obtained agaric acid diphenetidide—



$$C_{14}H_{27}\begin{cases}OH\\ CO-C_8H_{11}ON\\ CO-C_8H_{11}ON\end{cases}$$

occurs as a bluish-white crystalline powder, melting at 151° C. It is readily soluble in most organic solvents. The mono-phenetidide—



$$C_{14}H_{27}\begin{cases}OH\\ COOH\\ CO-C_8H_{10}ON\end{cases}$$

occurs as a colourless micro-crystalline, sparingly soluble powder, which contains water of crystallisation. When anhydrous it melts at 100° C. It is soluble in alkalies and alkaline carbonates, with which it gives soluble salts. If the condensation be effected in sealed tubes at 200° C., two other totally different bodies are obtained, a sparingly soluble mono-phenetidide, in silver-grey crystals, melting at 69-70° C., or a greenish-grey diphenetidide, in delicate needles, melting at 99-100°.—*Pharm. Zeit.*, **47**, 210, after *Berichte.*

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

MEETING OF THE COUNCIL.

WEDNESDAY, JUNE 11, 1902.

Present:—

Mr. G. T. W. Newsholme, President;
Mr. C. B. Allen, Vice-President;

Messrs. Atkins (Treasurer), Carteighe, Cooper, Corder, Cross, Gifford, Glyn-Jones, Harrington, Harrison, Hills, Park, Robinson, Savory, Southall, Storrar, Symes, Young.

The minutes of the previous meeting having been read and confirmed,

The President said there were two absentees from the Council. Mr. Taylor had requested him to apologise for his absence; they also missed Mr. Wootton, who, as probably all the members of the Council were aware, had been very dangerously ill, but he was glad to be able to say that Mr. Wootton was now making good progress towards recovery. He was sure the Council would wish him to write a letter to Mr. Wootton expressing the sympathy of the Council with him in his illness, and also the hope that he would speedily be restored to health again.

The Council indicated its desire that the President should write to Mr. Wootton on its behalf.

Death of Mr. Frederick Andrews.

The President said since the last meeting of the Council they had lost a gentleman who had been connected with the Society for a great many years. He referred to the late Mr. Frederick Andrews, who had rendered very great services not only to the Pharmaceutical Society in the capacity of a member of Council and as a Divisional Secretary, but also to pharmacy generally. He was sure the Council would desire to pass the following resolution of sympathy with the family:—

"That this Council regrets the death of Frederick Andrews, of Leinster Terrace, Hyde Park—a member of the Council from 1880 to 1884, and a former Auditor and Divisional Officer of the Society,—and desires to tender its respectful sympathy with the family of the deceased gentleman in the loss they have sustained."

The Vice-President said he should like to endorse that resolution. It so happened that he was elected to the Council to fill the vacancy that was caused by the resignation of Mr. Andrews something like eighteen years ago. Mr. Andrews then felt that he could not continue to give the necessary time to the Council, and he also felt that he had done sufficient active work, and could very well take a rest. He (the Vice-President) could bear testimony to the fact that Mr. Andrews had been most thoroughly in earnest in everything connected with pharmacy. He was one of the most loyal supporters of the Pharmaceutical Society, being a regular attender not only at its meetings, but also at all pharmaceutical meetings held in London. Pharmacy had lost a very loyal adherent in Mr. Andrews, and he very much regretted his death.

The resolution was then carried silently.

Election of President.

The ballot having been taken in the usual way, Mr. G. T. W. Newsholme was unanimously re-elected President.

The President said he thanked the Council very much indeed for the unanimous manner in which he had been elected for the third time to occupy the presidential chair. He appreciated the honour very highly. While he should have been glad to have seen some other member of the Council occupying the position, as it appeared to be the wish of the Council that he should again take the chair, he bowed to its decision. The work of the President, as everyone knew, was more or less onerous, and, being a provincial, the fact of having to spend so much time in the train perhaps made the work a little harder; but on the other hand his duties had been rendered exceedingly pleasant by the goodwill of his colleagues. He also wished to say how very ably he had been assisted by the Vice-President during the past two years. It would be understood that living out of London he could not always be present to fulfil certain duties, but he must say that in Mr. Allen he had had an excellent helper, who had done the duties that he could not perform himself in a very able manner. He hoped that the coming year would be a very satisfactory one. There was a great deal of work to be done, particularly in regard to further legislation. He would like to see the Committee of which Mr. Hills was a member—the Poisons Committee—report very early, so that something could be done in the way of getting a Bill which will be satisfactory to pharmacists and the public. He hoped that they would have a good year of office, and he was sure he might depend upon the help of everyone of his colleagues.

Election of Vice-President.

A ballot having been taken, Mr. C. B. Allen was unanimously re-elected Vice-President.

The Vice-President thanked the Council very heartily for its unanimous vote. He was very proud to hold the office of Vice-President. It was always a pleasure to do anything he could in the service of the Society, and he was very pleased that he had been of such service that his chief thought it worth pointing out. The Vice-President had only to be loyal to the Society and his chief, and when he had done that to the best of his ability he had done the duties of his office.

Election of Treasurer.

On a ballot being taken, Mr. S. R. Atkins was unanimously re-elected Treasurer.

Mr. Atkins said he thought this was a record election, in that there had been no divided interests. He thanked the Council very much for the renewal of its confidence. He appreciated the honour, because he found in going through life that to be the Treasurer of the Pharmaceutical Society was esteemed to be, and he thought rightly so, of some honour and value, and he hoped he should do nothing to discredit the honour of the position.

Standing Orders.

The standing orders of the Council were re-enacted for the ensuing year, but, on the suggestion of Mr. Robinson, who had previously given notice of motion proposing certain additions to the standing orders, it was decided to appoint a committee consisting of the President, Vice-President, and Messrs. Atkins, Carteighe, Glyn-Jones, Robinson, and Young to consider and report upon the procedure and standing orders of the Council.

Re-Appointment of Officers.

Mr. Richard Bremridge was re-appointed Secretary and Registrar for the ensuing year; Dr. B. H. Paul was re-appointed Editor, and Mr. John Humphrey Sub-Editor, of the Journal; Mr. E. M. Holmes was re-appointed Curator of the Society's Museums, and Mr. J. Rutherford Hill was re-appointed Assistant Secretary in Scotland.

Appointment of Committees.

The Council went into committee to consider the arrangement of the different committees, as the result of which the following arrangements were made:—

General Purposes Committee.

The whole Council to meet on the evening before the meeting of the Council, and at such other times as may be necessary.

Finance Committee.

President (Mr. Newsholme)
Vice-President (Mr. Allen)
Treasurer (Mr. Atkins)
Mr. Carteighe
Mr. Gifford
Mr. Glyn-Jones
Mr. Harrington
Mr. Hills
Mr. Park
Mr. Savory
Mr. Storrar

Benevolent Fund Committee.

President (Mr. Newsholme)
Vice-President (Mr. Allen)
Treasurer (Mr. Atkins)
Mr. Cooper
Mr. Corder
Mr. Cross
Mr. Harrison
Mr. Southall
Mr. Symes
Mr. Taylor
Mr. Wootton
Mr. Young

Library, Museum, School, and House Committee.

President (Mr. Newsholme)
Vice-President (Mr. Allen)
Treasurer (Mr. Atkins)
Mr. Carteighe
Mr. Cooper
Mr. Glyn-Jones
Mr. Harrington
Mr. Harrison
Mr. Hills
Mr. Robinson
Mr. Savory.

Law and Parliamentary Committee.

The whole Council to meet as occasion may require.

Standing Committee to Watch Parliamentary Business.

President (Mr. Newsholme)
Vice-President (Mr. Allen)
Treasurer (Mr. Atkins)
London Members of Council

Research Committee.

The President, Vice-President, and other members of the Library, Museum, School, and House Committee.

Freehold Investments Committee.

President (Mr. Newsholme)
Vice-President (Mr. Allen)
Treasurer (Mr. Atkins)
Mr. Carteighe
Mr. Hills
Mr. E. N. Butt

Evening Meeting Committee.

The Editor, the Staff of the Society's School, and the Curator were appointed to assist in making arrangements for holding the evening meetings.

Dispensers' Committee.

President (Mr. Newsholme)
Vice-President (Mr. Allen)
Treasurer (Mr. Atkins)
Mr. Glyn-Jones
Mr. Hills
Mr. Park
Mr. Storrar

Journal Enquiry Committee.

President (Mr. Newsholme)
Vice-President (Mr. Allen)
Treasurer (Mr. Atkins)
Mr. Carteighe
Mr. Glyn-Jones
Mr. Harrison
Mr. Hills
Mr. Savory

Election of Members.

The following persons, having tendered their subscriptions for the current year, were elected "Members" of the Society:—

Blamey, Edward Parr; Fowey
Burden, Oliver; Leicester
Dixon, Harold; Chislehurst
Edgar, Allan Herbert; Norwood
Hales, Thomas M.; Liverpool.
Hemens, Wilfred Frank; Willowmore, Cape Colony
Hume, Ernest N. W.; Strand
Ingham, John Bertram; Plumstead
Irvine, Peter; Uddingston
Kennedy, Robert; Johnstone
Lengden, Alfred; Cheltenham
McHarg, Alexander; Rutherglen
Obrien, Edward; - Colesberg, Cape Colony
Pool, Robert; Newcastle-on-Tyne
Robinson, Robert; Bournemouth
Smith, Philip S.; Market Rasen
Sumption, William C.; Blackwood
Thomas, Edward; London
Thomson, Archibald; Chester
Wilson, William Douglas; London

Election of Student-Associates.

The following persons, having tendered their subscriptions for the current year, were elected "Student-Associates" of the Society:—

Davies, Edward Owen: Carmarthen
Eaton, Edgar Smith; Swinton
Fowler, Alfred; Small Heath
Jones, Edgar Alfred; Ripon
Jones, Walter Eyton; Ruabon
Masters, Wm. Alex.; Notting Hill
Morris, David; Llanelly
Rees, David Griffith; Swansea
Robinson, Edwin Clegg; Oldham
Wilmshurst, Thomas Ernest; Hove
Wood, John F.; Wolverhampton

Restorations to Register.

The names of the following persons who have severally made the required declaration, and paid the restoration fee of one guinea, were restored to the Register of Chemists and Druggists:—

Peter Irvine, Central Buildings, Uddingstone, N.B.
Fred. Spivey, 38, Wharton Road, West Kensington, W.

Several persons were restored to the Society upon payment of the current year's subscription.

The Boards of Examiners.

The President then directed attention to a matter concerning the Boards of Examiners. He said that for some time past it had been felt that the Boards of Examiners were not in such close touch with the Council as they ought to be, and it was therefore thought desirable that the two Boards should be brought more directly into touch with the Council. There had been for some time a sub-committee of each Board which had dealt with certain questions, and it appeared to him that it might be useful if the Council utilised those sub-committees by appointing a further committee consisting of four members of the Council and two members of each of the standing committees of the Board of Examiners for England and Wales and the Board of Examiners for Scotland, and, of course, the President and Vice-President as *ex-officio* members. The President then read a statement which he had prepared, giving his views of the matter, and he proposed that a committee be appointed, to meet at Dundee during the British Pharmaceutical Conference in August next.

Mr. Robinson thought it would be advisable, if there were time, for the President's statement to be printed and distributed amongst members of the Council, so that they might be better prepared to consider the matter at the July meeting of Council. He therefore moved that the matter be postponed till the next meeting.

After some discussion, the President said the only reason for bringing the matter forward now was that if it was postponed till the July meeting it would leave only a very short time to make the necessary arrangements. Still, he quite appreciated Mr. Robinson's objection, and he would therefore withdraw his motion in order that the Council might have time to consider the matter before the next meeting.

Mr. Glyn-Jones said he thought it should be understood that the proposed Committee would have no administrative powers.

Finance Committee.

The report of this Committee included the following items:—

	£	s.	d.
Balance in May	£4,301	0	7
Receipts	1,751	17	11
	£6,052	18	6
Payments during May	£2,161	18	4

Payments to the amount of £1,835 14s. 7d. for the current month were recommended.

The report was adopted.

Benevolent Fund Committee.

The report of this Committee included a recommendation of a grant of £5 in the following case:—

A registered chemist and druggist (51). Has had previous grant (Camden Town). Three cases were deferred, and the death on May 12 of Mr. Thomas Evans (80), Liverpool, who had been an annuitant since 1897, was reported.

The Vice-President, in moving that the report and recommendation of the Committee be received and adopted, said he was glad to report that a candidate for the British Home for Incurables, Streatham, in whom the Council had been interested for some time past, Miss Heyes, the daughter of one of the Society's annuitants, had been elected to a pension. It was also very gratifying to find that a former pensioner—Miss Wells—whom the Council took some interest in when she was elected, had done a great deal to secure the election of Miss Heyes. He also had to ask for votes on behalf of Robert Valentine Honman, the child of a deceased pharmaceutical chemist, who was a candidate for the London Orphan Asylum at Watford. If any members of the Council had votes for that institution, or could influence votes, it would be extremely valuable if they would give them to this boy.

The report was adopted.

British Pharmaceutical Conference.

The President stated that a letter had been received from the Secretary of the British Pharmaceutical Conference inviting delegates to the Conference to be held at Dundee in August. It was decided that the President, Vice-President, Treasurer, and Messrs. Cooper, Gifford, Harrison, Southall, Storrar, and Symes be appointed delegates to attend the Conference.

Library, Museum, School and House Committee.

The following report was submitted by this Committee: —

The Library, Museum, School and House Committee met on May 14, 1902. The usual monthly statements respecting the Society's Libraries and Museums in London and in Edinburgh were received, and particulars of these statements are published in the *Pharmaceutical Journal* for May 17, 1902.

The Committee dealt with various administrative matters relating to the superintendence of the School and House, and the proper and efficient conduct of the other departments of the Society under the charge of the Committee.

The School Staff attended. The Professor of Chemistry reported that the Laboratories badly required cleaning and painting, and the Vice-President was requested to inspect the premises generally and report to the next meeting on the work that should be done during the vacation.

The Committee recommends that Professor Collie be authorised to purchase the physical apparatus which he informed the Committee he considers to be essential for the lectures on physics, at a cost not exceeding £15, and that the amount be charged to the Society's General Fund.

Martindale Legacy.—The Committee decided that the £17 19s. received under the will of the late Mr. Martindale for the Library be expended in the purchase of new books on pharmacy, as they are published, until the amount is exhausted.

Library, etc.—The Committee ordered the Library to be closed on Thursday evenings from the end of May until the end of September. It was also ordered that the Library and Museum be closed at five p.m. each day (except Saturday) during July, August, and September, and that they be closed entirely from September 1 to 14 inclusive.

House.—The Committee recommends that the Society's House be connected with the telephonic service, and that the necessary application be made forthwith.

Research.—Professor Greenish handed in Part III. of the report on "Solubilities," and it was decided to publish the report in the *Pharmaceutical Journal*. Professor Greenish also reported certain details in respect to the work being done by the E. Northway Butt scholar. Professor Collie reported that the Salters' Research Fellow was still engaged on the standardisation of coca solutions, and hoped the work would soon be sufficiently advanced to allow of a report being made.

Three advanced students, who had just passed the Major Examination, were admitted to the Research Laboratory as workers for the remainder of the Session.

On the motion of the President, the report was adopted.

The Sessional Address.

It was resolved that the selection of a person to deliver the sessional address in October next be remitted to the Library, Museum, School and House Committee.

Appointment of a Divisional Secretary.

Mr. W. Gray was appointed Divisional Secretary for Walthamstow

Resignation of a Divisional Secretary.

The President said he had received a letter from Mr. William Harvey, who wished to resign his position as Divisional Secretary for the North-East Division of Bethnal Green. Mr. Harvey had been an extremely loyal member of the Society for a great many years, and had rendered very good service as a divisional officer of the Society, but he now felt compelled to resign his position. He was sure the Council would wish to express its regret that Mr. Harvey felt compelled to relinquish the work he had done for so long.

Correspondence.

The British Pharmacopœia.

The President stated that he had received letters of acknowledgment from the gentlemen who had been elected honorary and corresponding members of the Society, also a communication from the Registrar of the General Medical Council, enclosing a cheque for £100 on behalf of the Pharmacopœia Committee towards defraying the cost of the Society's research work in connection with the solubilities of chemical substances official in the British Pharmacopœia.

This communication was referred to the Research Committee.

Dispensing of Poisons at Aberdeen.

The Secretary then read a letter from the Secretary of the Aberdeen Pharmaceutical Association, in which the Association directed attention to the manner in which poisons are dispensed by unqualified persons in Aberdeen.

This letter was referred to the General Purposes Committee.

American Pharmaceutical Association.

A communication was also read from the American Pharmaceutical Association, addressed to the officers and members of the Pharmaceutical Society of Great Britain, stating that the fiftieth annual meeting of the Association would be held at Philadelphia on September 8, at which the golden anniversary of the Association would be celebrated, and the President and Council of the Association extended a cordial invitation to delegates from the Pharmaceutical Society.

Mr. Carteighe suggested that the President was the person to represent the Society.

The President: Perhaps Mr. Carteighe would like to represent us.

Mr. Carteighe: I have already been to such a meeting. When I was President I felt it was my duty to go, and I did go.

Continuing, Mr. Carteighe said he thought there might possibly be someone who would like to represent the Society. It was a very important meeting, the American Pharmaceutical Association representing as nearly as possible the British Society, because it was a body composed of members from all the States, which, as those present probably knew, each had separate boards. To those who had no experience of the loyalty and almost affection of the American pharmacist towards his British *confrère*, it was a very great pleasure and an education to be amongst them.

Pharmacy Board of Victoria.

The Secretary then reported the receipt of the annual report of the Pharmacy Board of Victoria; also of a letter from the Privy Council Office acknowledging receipt of the new Bye-Laws and the poisons regulations.

Pharmacy in Orange River Colony.

The President said a communication had also been received from the Colonial Office enclosing the proclamation referring to the admission of persons into the Orange River Colony of South Africa who wished to practise as chemists and druggists or as medical practitioners and dentists.

The Secretary then read the proclamation, which was dated April 25, 1902, and published at Bloemfontein. It stated that no person would be admitted to practise as a chemist and druggist, medical practitioner, or dentist unless duly qualified, and that the penalty for practising without proper qualification or improperly using the title would be a fine not exceeding £100. (See page 519.)

Mr. Hills pointed out that some time ago the Council was in communication with the Colonial Office regarding this matter, with a view to assisting Lord Milner to draw up the proclamation which had just been read.

The President said it would probably be remembered that at a former meeting of the Council a communication was received from the Colonial Office in reference to this matter, which was referred to the Law and Parliamentary Committee, and certain suggestions were sent to the Colonial Office. He thought it was very satisfactory that the Council had been able to render some assistance to the Administrator of the new Colonies in the somewhat difficult task of settling affairs out there.

Mr. Robinson: They recognise the diploma of this Society, I suppose?

The President: Yes; but, of course, it must be understood that this is only a provisional measure pending the settlement of the country.

This concluded the public business, and the Council resolved itself into the General Purposes Committee.

PRACTICAL NOTES AND FORMULÆ.

Viscogen.

Under this name, saccharated solution of lime has been successfully used, in very minute quantity, to restore the consistence of Pasteurised cream, which is thinner than natural cream. The amount necessary is very small. The employment of the lime for this purpose is free from objection, but it has also been used to give a fictitious appearance of richness to poor, thin cream.—*Cape Agric. Journ.*, after *Rural New Yorker*, **20**, 113.

To Mask the Taste of Creosote.

Legendre employs coffee to cover the disagreeable taste and odour of creosote. Employing the solution of calcium chlorhydrophosphate and creosote, he finds that by macerating freshly roasted coffee, 4, in 10 parts of the solution for four or five days, then filtering and sweetening by the addition of syrup of tolu, 2, a palatable preparation is obtained, of which one tablespoonful contains 7·5 Cgm. of creosote.—*Journ. de Pharm. d'Anvers*, **58**, 130.

Cosmetic Skin Ointments.

H. Kuehl strongly recommends the two following ointments, which he states he has found to be most efficacious by practical use. The first is an emollient bleaching cream, which owes its properties to hydrogen peroxide. It is composed of lanoline, 30; sweet almond oil, 10; mix and add a solution of borax, 1; in glycerin, 15; and hydrogen peroxide, 15. The second is specially useful for removing blotches and pimples, as well as having a bleaching action. The formula is:—White precipitate ointment, 5 Gm.; zinc ointment, 5 Gm.; lanoline, 30 Gm.; oil of sweet almonds, 10 Gm. Mix and thoroughly stir in a solution of borax, 2 Gm., in glycerin, 30 Gm.; rose water, 10 Gm.; and strong nitric acid, 5 drops. The acid is stated, in the minute trace indicated, to have a marked bleaching action on the skin.—*Deutsch Amer. Apoth. Zeit.*, **22**, 147.

Cade Oil Emulsion for Skin Diseases.

F. Balzer and A. Schimpffe prescribe the following emulsion for application in psoriasis and other skin diseases in the form of a bath. Cade oil, 50 Gm.; fluid extract of quillaia, 10 Gm.; the yolk of one egg; distilled water, *q.s.*, to produce 250 Gm. Rub down the egg in a mortar, add slowly and thoroughly, incorporate the cade oil, adding at the same time at intervals a few drops of the quillaia extract; when a perfect emulsion is formed, add the water. This emulsion keeps well; before use it should be diluted with a little warm water and added to the bath water. The quantity employed for each bath should not exceed 100 Gm., and the immersion of the affected part in the bath should last for half-an-hour.—*Bull. gén. de thérapeut.*, **132**, 729.

LETTERS TO THE EDITOR.

Sale of Food and Drugs Act.

From a statement of Inspector Rushworth appearing under the above heading in the *Pharmaceutical Journal* of the 7th inst., I find that lime water which is capable of producing the effects desired by medical men "can be bought for a penny a gallon and is sold at twopence a pint"! I should be glad if that gentleman could tell me and my collegiates what that standard of effects desired by those medical men is; or, if he alludes to the B.P. standard for lime-water, where the same can be bought at a penny per gallon or is sold at twopence per pint. Two excellent mydriatics lately discovered are—"People who live in glasshouses should not throw stones at others," and "With truth and justice on their side, can Britons fear to die?"

John Williams, M.P.S.

Criccieth, N. Wales, June 10, 1902.

The Examination of German Pharmacists.

In your paper of the 7th inst. Mr. D. B. Dott refers to the time occupied by practical work in the German State examination. If you think it of sufficient interest to your readers, I should be pleased to place at your disposal the following short account of my experience when I qualified in spring, 1894, at the University of Erlangen. The first part of the practical work in chemistry was the analysis of a mixture, for which one day, from about 10 a.m. to 5 p.m., was allowed. I had Hg, K, Na, Br, Cl, Cy. Then I had to estimate gravimetrically the amount of Hg in the mixture, and two estimations had to be done. Time allowed, one day and a half. After that one qualitative and one quantitative (gravimetric) analysis of poisoned food was given. The first one—I happened to find tin—was done in one day, but the second one—an estimate of As—took me nearly three days. At the same time, with this toxicological work the preparation of two chemicals—in my case 50 grammes of KBr and 50 grammes of ferric tartrate in scales—had to be carried out. Full written reports of all this work must be furnished by the candidates. The preparation of two simple galenicals of the German Pharmacopœia took about two hours of another afternoon. I did not happen to get any volumetric work. The time allowance for all the practical work was certainly very liberal. The whole German Staats Examen occupies about four to six weeks; sometimes there are intervals of nearly a week between the single parts of it. No dispensing is required.

London, June 9, 1902. "German M.P.S." (138/18).

Sempervivum Tectorum.

With regard to the interesting discussion on this plant, I notice that although Mr. Bell and others have given somewhat exhaustive accounts of the various names it bears in different countries, there is one which I have not yet seen stated, viz., silgreen, which it bears in some districts in the West of England, and which I have always understood to be derived from the fact that it is frequently grown on window-sills. This name certainly has a close resemblance to the "silfgrene" spoken of by others, and one may be merely a corruption of the other. In the districts mentioned I have seen the juice of the plant, mixed with other ingredients, used as a cure for warts on the hands with some success.

June 9, 1902. "Vanadium" (138/27).

After-Dinner Speeches.

I have just come across the following in the *Daily Telegraph* for June 9:—

"Those ladies who form the committee of the Women Writers' Dinner, which takes place at the Criterion to-night, have boldly introduced an innovation which will command the fullest admiration. After the health of the King has been given with all honours, no speeches of any kind are to be made. In past years the fair banqueters have been called on to listen to orations sometimes dull and sometimes didactic; so on the present occasion they intend to rely only upon their own conversational powers for the post-prandial enjoyment of the evening. Mrs. W. K. Clifford will occupy the chair."

What an example for us!

London, June 10, 1902. E. W. Lucas.

The British Botanic Garden.

Mr. Graham Bott sends a lengthy letter in which he reminds Mr. Nunn that "one may be extravagantly absorbed in the pursuit of a special subject, yet it does not necessarily follow that the practical or financial side of the question must be lost sight of in his enthusiasm." Further, he fails to discern how thanks rendered to Mr. Cochrane for a particular act of courtesy affects his present attitude or obscures the point at issue, and he repeats that his former letter "was conceived in a most friendly spirit and with the express desire for a reorganisation of the affairs already alluded to." Other matters referred to in the letter will be more satisfactorily dealt with in a private communication to Mr. Cochrane.—[Ed. *P.J.*]

Dividing the Minor Examination.

"Curriculum" writes again to say that the framing of a practical scheme for a curriculum would be greatly helped by the experiment of first dividing the examination and then seeing how teaching methods could be adjusted to the reformed method of conducting the examination. That view has been sufficiently stated in "Curriculum's" previous letters, and his present communication does not furnish further reason for altering the opinion already expressed—that his view of the matter is a mistaken one. To define a practical scheme for a curriculum is not at present possible, but the essential objects to be aimed have been stated at page 471.—[Ed. *P.J.*]

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply.

Mineral Springs and Baths (N. W.—74/25).—You will find the information you ask for in Squire's 'Companion to the British Pharmacopœia.'

Voting Paper (F. L. S.—138/17).—Your letter should have been addressed to the Secretary, who informs us that your voting paper was duly sent.

Chemicals (W. B.—74/28).—We regret we are unable to undertake analyses of your specimens. It should not be difficult for you to ascertain what they are by applying a few simple tests.

Zinc Sulphate in Cement Filling (J. H. G.—74/30).—On account of the non-irritating effect of zinc sulphate on living tissue, it is used as an ingredient of the oxysulphate cement filling, for application over an exposed pulp instead of a filling containing zinc chloride.

Glycerole of Glycerophosphates (J. L. F.—74/14).—Probably by substituting a mixture of glycerin and water of sp. gr. 1·310 to 1·320, for the sugar and water in the B.P.C. formula, you would obtain a useful preparation which would keep well.

Jury Service (C. P.—74/31).—By the decision of the Appeal Court in the case of The Queen *v.* Dutton, January, 1892, exemption under the Juries Acts, from service on juries, was held to extend to, and include, coroners' juries. The case referred to is quoted in legal works as *R.* v. *Dutton*, Div. Ct. [1892], 1 Q. B. 486.

Atomic Weights (E. L. and W.—138/19).—Hinrichs' book on the absolute atomic weights of the chemical elements is published by Mr. C. G. Hinrichs, St. Louis, Mo., U.S.A., price one dollar. A review of the work appeared in the *P.J.* of January 18 last, copies of which can be obtained at the publishing office, 8, Serle Street, Lincoln's Inn, W.C.

Separating Water from Egg (H. G.—74/12).—Your query is not very clear; we presume you want to render the albumin anhydrous. You cannot do that by any mechanical method such as centrifuging. The best way is to spread the white out on a glass plate in a thin sheet and expose it to a current of dry air, not hot enough to cause coagulation. That is how commercial dried egg albumin is obtained.

Lethal Chamber for Destroying Dogs (J. H. D.—74/20).—We are informed by the Secretary of the Home for Lost and Starving Dogs that these lethal chambers are made by Mr. Bertram Richardson, the son of the late Sir Benjamin Ward Richardson, who was the discoverer of the method of destroying dogs by means of the vapour of chloroform and carbonic acid gas. You would probably obtain full particulars by applying to Mr. Richardson, 4, Belsize Road, London, N.W.

Free Chlorine in Chloroform (G. C. R.—74/29).—Any free chlorine would liberate the iodine from the cadmium iodide, and the iodine would react with the starch, thus producing a blue coloration. Cadmium iodide appears to be used in the B.P. test for free chlorine in chloroform because it is a more stable salt than potassium iodide, which always contains free iodine after being kept. It is, therefore, unnecessary, if cadmium iodide be used, to take any precautions to prevent the formation of a blue coloration by the action of the test solution alone, as would be the case if potassium iodide were used.

Jenner's Blood Stain (J. A.—74/24).—Mix in an open basin equal parts of an aqueous solution (1·2 to 1·25 per cent.) of Grübler's water-soluble eosine (yellow shade) and of an aqueous solution (1 per cent.) of Grübler's medicinal methylene blue. Stir thoroughly with a glass rod, leave the mixture for 24 hours, and then filter. Dry the residue below 55° C., then scrape it off the filter paper and powder it, after which it should be shaken up with distilled water, washed on a filter, and again dried and powdered. For use, shake thoroughly 0·5 Gm. of the powder with 100 C.c. of pure methyl alcohol. An alternative method of making the stain is to mix 125 C.c. of a solution (0·5 per cent.) of the eosine in absolute methyl alcohol and 100 C.c. of a solution (0·5 per cent.) of the medicinal methylene blue in the same solvent. The method of using the stain is described in the *Lancet* for February 11, 1899.

Special Notice to Correspondents.

All Communications for the 'Pharmaceutical Journal' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should arrive not later than Wednesday morning.

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LONDON: SATURDAY, JUNE 14, 1902.

PHARMACY IN ORANGE RIVER COLONY.

THE end of the war is being followed by inquiries from various quarters as to the conditions under which British subjects will be permitted to practise their ordinary professions in the new colonies which have been added to the Empire. So far as chemists and druggists are concerned, the conditions under which they may practise in the Transvaal Colony have not yet been announced, but those relating to the Orange River Colony are specified in a proclamation by the Deputy Administrator, the full text of which is published in the *Government Gazette* of the Colony. The term "chemist and druggist" is defined as meaning any person duly admitted in the Colony as an apothecary or chemist and druggist, on the day before the taking effect of the proclamation, and also any person duly qualified by registration under the proclamation to practise as a chemist and druggist within the Colony.

Legally qualified persons who have previously been duly admitted as chemists and druggists are permitted to continue to practise or carry on their calling without obtaining any certificate of registration. But any other person desiring to practise as a chemist and druggist must obtain a certificate of registration signed by the Secretary of the Orange River Colony Administration, and, in order to obtain such certificate, he must submit his diploma or other certificate of being duly qualified to practise as a chemist and druggist, for the examination and approval of the Secretary. In addition, the Secretary may require the person to make a sworn declaration before a Justice of the Peace, or to produce satisfactory proof of identity and good character, also of the authenticity of the diploma or certificate, and of his right to practise elsewhere under that diploma.

No certificate of registration will be granted unless (1) the holder of the diploma is entitled to practise as a chemist and druggist in the country in which it was granted, and (2) by the laws of the country where the diploma was conferred, British subjects legally qualified to practise as chemists and druggists are afforded privileges equivalent to those granted by registration under the Deputy Administrator's proclamation. Any person wilfully and falsely pretending to be, or taking or using the name and title of, a chemist and druggist, or any name, title, addition, or description implying that he is duly qualified under the proclamation to practise as a chemist and druggist, and any person who shall practise as a chemist and druggist without being entitled to practise as such under the proclamation, will be liable to a fine not exceeding one hundred pounds for each offence, and in default of payment he will be liable to be imprisoned, with or without hard labour, for a period not exceeding six months. In conclusion, it may be pointed out that the conditions under which duly qualified persons will be permitted to practise as chemists and druggists in the Orange River Colony are identical with those referring to medical practitioners and dentists.

SUBSIDISED SCHOOLS OF PHARMACY.

AT the recent annual meeting of the Pharmaceutical Society of Great Britain, the President found it necessary to speak very plainly on the subject of the School of Pharmacy, at Bloomsbury Square. That school was established in 1841, and, during the past sixty years, many of the most prominent pharmacists have finished their education in the institution. But nowadays it is preparation for examination rather than education that students seek, and the majority flock to schools where they can obtain what they want rather than what they need, the reputation of a school among students being for the most part strictly in proportion to the success of the teachers in getting men passed. The year 1899 was a record one for attendance at the School of Pharmacy, and special provision was, therefore, made to accommodate more students in future. But the succeeding session saw a considerable diminution in the number of students, and last year a similar state of affairs prevailed. The President, in referring to the matter, stated very plainly that the school has not recently received from students the support which the Council has felt justified in anticipating, and that, as a result, some modifications of traditional policy may be required. A similar warning has now been given by the President of the Irish Society (see p. 527), and pharmaceutical students in Great Britain and Ireland alike are confronted by the fact that, unless they make better use of existing opportunities, the schools subsidised by the two societies may soon have to close their doors for lack of support.

ANNOTATIONS.

The Pharmacopœia Committee of the General Medical Council, in its report presented on June 2, referred in appreciative terms to the minute and exhaustive inquiry into the solubilities of the chemical substances included in the British Pharmacopœia, which has been conducted by Professor Greenish under the direction of the Research Committee of the Pharmaceutical Society of Great Britain, in the laboratories of the Society. The Committee pointed out that, in order to ascertain the purity of the drugs under examination, it has been necessary to scrutinise afresh the chemical tests given for them in the Pharmacopœia. That scrutiny, as stated last week, has led to suggestions for the improvement of those tests, which are said to call for the fullest consideration in the revision of the Pharmacopœia. Similar researches are in progress in relation to the percentage of ash which should be yielded by good specimens of the official vegetable drugs; and here, again, collateral inquiries have been instituted bearing on the identification of the vegetable drugs and of their powders. Methodical and laborious inquiries of the above nature cannot be carried on without incurring considerable expense, and in this case the cost to the Pharmaceutical Society has been unexpectedly heavy. The Pharmacopœia Committee has expressed high appreciation of the service rendered by the Society and its officers to pharmaceutical science in general and to the revision of the Pharmacopœia in particular, and recommended that a grant of £100 be made to the Society as a contribution towards the expense incurred by it in carrying on those valuable investigations. That recommendation commended itself to the General Medical Council, as already reported. It is of interest to note that the Pharmacopœia Committee is further of opinion that it is desirable that a digest of the criticisms and researches bearing on the Pharmacopœia, which have been published from 1898 to the present time, should be procured, and that the sum of £50 has been placed at the disposal of the Committee for that purpose.

An Ideal University will probably always remain within the sphere of the unattainable, but earnest endeavours are being made to bring such an institution within the limits of what is possible in London, the one great city in the civilised world which has up to the present lacked a real university. The latest utterances on the subject have proceeded from Professor E. H. Starling, M.D., F.R.S., who delivered the Foundation Day oration at University College, London, last week, before a large and appreciative audience, presided over by Lord Monkswell. He took as his subject "The Building of the University," and endeavoured to show how the work begun seventy-five years ago by the founders of University College—the original University of London—could best be completed. The object in view, as he pointed out, was the establishment in London of a university adapted to the needs of the metropolis and offering to all classes and creeds of the Empire an education which would fit them to take their part in the struggle for the persistence of the English race and English ideals, not only for mere existence. A single institute or group of institutes would not, in Professor Starling's opinion, afford an adequate solution of the problem, as the university must be equally accessible to dwellers in the north, south, east, and west of London—a condition which could only be fulfilled in the case of a single institute by placing the university in the heart of the City. A better and more feasible way, it was suggested, would be to adopt a process of division, so that a complete university centre should be provided in the close neighbourhood of the railroads which serve the four quarters of the London area. Such a division of the university might be accomplished without in any way destroying the unity of the whole, and in the ideal university there would be a centre in each of the four quarters of London, each of the centres being a complete university in so far that it would be a place for study and research in all branches of knowledge, and a separate community of teachers and scholars. The local business affairs of each centre would be under the control of a committee or council appointed by the Senate of the university, but containing representatives of the local body of professors. All the centres would be but parts of the university, with common aims, with similar curricula, and the same standard of examination, while the Senate of the university, which would contain representatives from all centres, would be responsible for the appointment of the local governing bodies and would keep in their own hands the power of appointing and dismissing professors.

Ten Thousand Students could have their training provided for within the University of London, if Professor Starling's ideal were realised, and it would also be possible to ensure the freedom of teaching and research, and the living contact of each student with men of different ideals and modes of thought, which are the most valuable factors in a university training. But such a university cannot be founded without the possession of adequate means, and each centre would necessitate the erection of buildings at a cost of about £500,000, on ground covering from five to ten acres, while for a moderate endowment of its professorships and the maintenance of its laboratories a yearly income of £50,000 should be provided in addition to the income from students' fees, which might amount to another £30,000. Nevertheless, Professor Starling is convinced that there would be no difficulty in raising the required amounts in London, either by the generosity of rich men or by grants from public funds, if only those interested in the making of a university would combine their efforts towards a common end. He pointed out that the task has been rendered easier by the fact that in the building of the university it would be possible to utilise for university purposes in London many of the buildings and endowments already existing, and it is in the hope of inaugurating a common movement in that direction that University College has declared itself ready to be incorporated in the university, the first stage in the making of a great London university being thus half completed, since more than half of the sum of £170,000 necessary for the incorporation of University College has already been subscribed. The solution of the question, Where to find the other centres? is already under consideration by various bodies in the university.

The Faculty of Medicine of the University is engaged in drawing up plans for the establishment of a great institute for preliminary and early medical studies in the immediate neighbourhood of the university buildings in South Kensington, at a cost of £150,000 for laboratories and at least an equal sum for endowment of professorships. Further, the University already contributes a considerable sum annually out of its grant from the Technical Education Board to the expenses of the engineering school, the central institute of the City and Guilds, and it is hoped that this is but the prelude to an incorporation of that school in the University. For the university centre of South London there is already a nucleus in King's College, but Professor Starling thinks it would be an advantage if the building of that college were given back to the Government, on condition that the University receives in exchange five or ten acres of land in a corresponding position south of the river, and erects thereon new buildings fitted to modern requirements and with accommodation for the large number of students which would be provided by South London and the southern railroads. An East London centre is urgently required for the scientific training of men who are to be leaders and captains of industry in that great manufacturing district, but the facilities for university education in that part of London are at present most rudimentary. It seems possible, however, that the University could make use of the excellent institute maintained by the Drapers' Company, as a nucleus on which to build its fourth centre, in which the faculties of science, applied science, and engineering would take a foremost place. In addition to the four centres, Professor Starling would have a number of schools of the University, which should preserve their autonomy, but would direct their teaching according to the requirements of the University. Such schools would be mainly post-graduate in character, their office being to graft on the general training in method acquired within the walls of the University itself the special professional training necessary to fit the student for the pursuit of medicine, law, commerce, administration, etc. Among such institutions would be included the twelve medical schools attached to the great hospitals of London, the School of Economics and Commerce, the various training schools, and the great legal corporations, which are said to have so far failed to grasp the extent of their responsibilities in the formation of a legal faculty of the University. Nothing was said by the lecturer about provision for teaching pharmacy, but in a complete scheme of the kind indicated the School of Pharmacy at Bloomsbury Square should surely find a place as a school of the University, and doubtless other schools might be established on a similar basis in other quarters of London.

Euphorimetry, as readers of the Journal may be interested to know, is the name applied to a pseudo science, defined as the art of measuring the fertility of the soil. The word was more familiar sixty years ago, when experiments with different fertilising materials were made by Varembey. Recently a proposal has emanated from a French source to revive the subject, as it is thought that sufficient data are now available to make at least a beginning in the direction of laying down a mathematical basis for determining the relation between soil fertility and crop production. It is proposed to meet the first and principal difficulty, the choice of a type of comparison or scale of measurement, by experiments with different fertilising materials, similar to those made by Varembey, a field being divided into four parts, one of which is unmanured, whilst the other parts receive ten, twenty, and thirty loads of manure respectively. From the crop of wheat, oats, barley, rye, etc., on the different plots the productive capacity of a given quantity of manure for each crop is said to be readily calculated. Calling the effect produced by 1,000 kilogrammes of manure per hectare one degree of fertility, a "euphorimetric scale" is constructed, each degree of which corresponds to a definite product of crop. The author of the proposal admits that the inconstancy of the seasons and the variations of the temperature may overthrow all predictions and destroy all calculations, and, as a writer in the *Times* points out, after such an admission, it seems hardly profitable to pursue the subject further. It is also thought to be surprising that nowadays, when so much has been ascertained experimentally about soil fertility and the changes in location and condition which fertilising materials undergo in the soil, such an idea as that of euphorimetry, which might possibly have passed muster in the time of Varembey, when the Rothamsted experiments of Lawes and Gilbert were in their infancy, should be brought forward with any degree of seriousness. In conclusion, it is stated that it was a mistake to disinter euphorimetry from the grave in which it had slumbered for over half a century, and that no better fate can befall it than speedy reburial.

Showers of Pollen have recently been mistaken for sulphur in certain parts of the country. Thus, a Somerset clergyman has written to the *Times*, stating that he awoke one morning to find that sulphur had fallen with the somewhat heavy rain of the previous night, and was left as a sediment in the puddles after the water had disappeared from them. The same phenomenon was observed in other Somerset villages, and the clergyman appears to have jumped to the conclusion that it was in some way connected with the recent volcanic disturbances. A Woodchester correspondent also wrote to say that a thick deposit of sulphur had been left on the edges of a stone drain after heavy rain, but Mr. C. Turner, principal of the Manchester College of Pharmacy, has done his best to reassure the writers by explaining that the substance which they took to be sulphur was probably pollen from pine trees. That, as he pointed out, is often produced in large quantities, and has many times been mistaken in country places for "showers of sulphur." If it be examined microscopically its true nature will at once be evident, and, as Mr. Turner puts it, if his surmise be correct, the flowers which bloom in the spring have more to do with the case than the recent volcanic eruption.

The Revised Budget or national balance-sheet for 1902-3 has just been issued. In the original Budget statement the estimated expenditure was £188,469,000. The revenue was set down at £152,935,000, so that there was a deficit of £35,534,000, which was to be met by the proceeds of the £32,000,000 loan, and out of the Exchequer balances. In his revised statement the Chancellor restores the sinking fund of £4,640,000, and adds to ordinary expenditure the £1,000,000 for South African Constabulary and West Indian grants, but drops £16,750,000 of the supplementary provision to meet contingencies. The following is the result:—

Total estimated expenditure	£176,359,000
Total estimated revenue	152,435,000
Deficit	23,924,000
Deficit to be met out of proceeds of Consols loan...	29,920,000
Leaving for contingencies and redemption of Unfunded Debt	5,996,000

A War Office statement has also been issued, showing approximately the sums still required to be expended on the Army in South Africa in 1902-3:—

Total amount provided (Army Estimates)	£39,650,000
Expenditure in April and May (about)	11,650,000
Balance to be spent	£28,000,000

As readers of the Journal are doubtless already aware, the extra penny added to the Income Tax is to be maintained, as well as the new import duties on grain and flour.

The Supply of Duty-free Alcohol for manufacturing purposes, which has now been promised by the Chancellor of the Exchequer will be of far-reaching effect, and may even result in the loss of German supremacy in the domain of chemical industry. At the very least, the concession now promised comes in time to save from extinction the business that has remained with many British chemical manufacturers, and should go far to help in the develoment of manufactures which it has not heretofore been possible to conduct profitably in the United Kingdom. It is interesting to note that the Chancellor has promised to make inquiry into the possibility of removing the duty on ethers and other compounds which are largely used by chemical manufacturers, in addition to exempting alcohol required for manufacturing purposes.

POISONING CASES.

The deaths by poison reported last week included one suicide by oxalic acid, which had been recorded the previous week. The present list, for the week ending June 11, includes seventeen deaths—six accidental cases and eleven suicides, thus:—

Poison.	Accident.	Suicide.
Acetic Acid	—	1
Ammonia	—	1
Carbolic Acid	2	2
Chloroform	1	—
Hydrochloric Acid	1	—
Laudanum	1	2
Oxalic Acid	—	1
Potassium Cyanide	—	1
Prussic Acid	—	1
White Precipitate	—	2
Other Poison	1	—

Acetic Acid caused the death of a girl of eleven, at Tunbridge Wells, who had found a bottle containing aromatic vinegar and drank some of the contents.

Ammonia caused the death of an innkeeper at Windhill, who had swallowed two ounces of liniment containing the alkali.

Carbolic Acid was the cause of the death of a young child at Pontefract and of a soldier's wife at Dover, who is thought to have drunk it in mistake for porter. Two suicides by carbolic acid have been reported—a housemaid employed in Victoria Street, Westminster, and a furnaceman at Fence, near Rotherham.

Chloroform, used as an anæsthetic, caused the death of a young married woman at Wolverhampton.

Hydrochloric Acid was taken by a Leicester shoemaker in mistake for a toothache mixture.

Laudanum was purposely taken by a Sheffield butcher and by a Nottingham lace manufacturer, while an accidental overdose caused the death of a shipping clerk at Streatham.

Oxalic Acid was taken with suicidal intent by an elderly woman at Islington.

Potassium Cyanide was taken by a footman in service at Kensington.

Prussic Acid was the cause of death in the case of a man (London) who had practised as a specialist in diseases of the nose and throat, though he does not appear to have been registered as a medical practitioner.

White Precipitate was taken by a young lady at Scarborough, who had purchased an ounce of the poison at Taylor's Drug Stores. At the inquest the jury recommended that white precipitate should be included in Part 1 of the Poisons Schedule. The same poison appears to have been taken by an aged labourer at Horsington.

Other Poison.—A woman died at Hebburn after inadvertently swallowing some acid, having apparently got hold of the wrong bottle.

Non-Fatal Cases.—Several cases of attempted suicide by poison have been reported during the week, the poisons used including carbolic acid, laudanum, oxalic acid, and rat poison (three cases). Ammonia was taken in mistake for whisky by a horsekeeper at Bradford, whose life was saved by the prompt administration of vinegar and water by a policeman. A man and his son (aged 2) were also received at the Royal Free Hospital, London, suffering from the effects of hydrochloric acid, which appears to have been administered by the father with felonious intent.

REVIEWS AND NOTICES OF BOOKS.

'Chemical Handicraft.' An illustrated and priced catalogue of chemical apparatus and reagents. Pp. 447. Price 3s. London: John J. Griffin and Sons, Limited. 1902.

This is a new edition of a well-known catalogue of chemical apparatus and reagents, an especial feature of which is the manner in which the articles included are illustrated and described, and their uses explained. It serves as an excellent guide in fitting up laboratories, and should be kept at hand for reference by every chemist and teacher of chemistry.

'First Steps in Photo-Micrography.' By F. Martin Duncan, F.R.H.S. Pp. 104, with illustrations. Price 1s. net. London: Hazell, Watson, and Viney, Limited. 1902.

The author calls this a hand-book for novices, and in its supplies a simple and non-technical account of the methods and apparatus employed in the production of photo-micrographs. He refrains from going into such details as would be likely to bewilder the beginner, and devotes the space at his command to a description of the manner in which he may most successfully surmount those difficulties which are sure to beset his first attempts. Low-power photo-micrography is first dealt with, then medium and high-power work, after which attention is devoted to the development of negatives, printing, preparation of objects, etc., the final chapter treating of stereo photo-micrography. The advice given by the author is good, and his little book should serve as a useful introduction to more advanced works on the subject.

'Enlarging Negatives.' Edited by Edward Tennant. Pp. 48. Price 6d. London: Dawbarn and Ward, Limited. 1902.

This latest number of the *Photo-Miniature* is devoted to the enlargement of negatives, a branch of photographic work which is productive of wonderful results in capable hands. The instructions given for the production of large prints from small negatives are very practical, and useful hints are given for the manufacture of various inexpensive appliances required at different stages of the work.

'Encyclopædia Britannica.' Tenth Edition, Volumes 1 and 2. Pp. 808 and 763. Edinburgh and London: A. and C. Black. 1902.

Attention has already been directed (*ante*, p. 448) to the fact that the 'Encyclopædia Britannica' is being brought up to date by the addition of eleven supplementary volumes to the twenty-four already in general use. The first and second of the supplementary volumes have now been issued, and a mere enumeration of their chief contents, with the names of the writers should suffice to prove what a valuable addition to any library they must prove. In the first volume, Professor Vivian B. Lewes writes about acetylene, Professor Charles S. Hastings about achromatic objectives, and Professor J. H. Poynting about acoustics. An article on adulteration is contributed by Mr. Otto Hehner, and another on æther by Dr. J. Larmor; while Professor R. W. Phillips treats of Algæ, Professor Macalister of anatomy, Professor J. Bayley Balfour of Angiosperms, Lord Rayleigh of argon, and Mr. Andrew A. Blair of assaying. The second volume contains articles on bacteriology by Professors H. Marshall Ward and Robert Muir, Bryophyta by Dr. W. H. Lang, and chemistry by Professor Henry E. Armstrong. The last-mentioned article occupies forty pages, and is largely devoted to accounts of the discovery of new elements and the classification of elements, in addition to a very full exposition of modern notions regarding atomic and molecular weights, valency, structure and isomerism, chemical change, and physical properties.

LEGAL INTELLIGENCE.

Medicine Stamp Duty Acts.

Ammoniated Tincture of Quinine, B.P.

At the Thames Police Court, before Mr. Dickinson, on June 6, the hearing of the case against Mr. W. S. Glyn-Jones (see *P.J. ante*, p. 443) was resumed.

Mr. Dennis appeared on behalf of Somerset House, and Mr. C. H. Kirby defended.

It will be remembered that the defence claim exemption to duty under the Act 52 Geo. III., C. 150, under certain circumstances, for preparations, the composition of which is known, the one in question being ammoniated tincture of quinine. The Magistrate suggested at the previous hearing that the two parties might come to an agreement upon certain points in dispute, and the following are the "admissions" which both sides were prepared to make:—

Farmer v. Glyn-Jones.

For the purpose of the proceedings in this case it is admitted as follows:—

1. That the defendant is a registered chemist and druggist, and served a regular apprenticeship.
2. That the defendant holds a licence for the sale of medicines liable to duty under the Medicine Stamp Duty Acts, and sold a bottle of ammoniated tincture of quinine, B.P., which did not bear a medicine stamp.
3. That ammoniated tincture of quinine, B.P., is a mixture composition, or preparation of medicinal drugs bearing different denominations or having different properties.
4. That the ammoniated tincture of quinine, B.P., sold by the defendant was prepared in accordance with a formula published in the British Pharmacopœia of 1898, and the words "B.P." on the label affixed to the bottle are intended to indicate that it was so prepared.
5. That the denominations, properties, qualities, virtues, and efficacies of ammoniated tincture of quinine, B.P., are "known, admitted, and approved of in the prevention, cure, or relief of" influenza and colds, and that influenza and colds are ailments affecting the human body.
6. That the defendant has not, nor claims to have, any occult secret or art for the mixing, compounding, or preparing of ammoniated tincture of quinine, B.P.
7. That the defendant has not, nor claims to have, any exclusive right or title to the mixing, compounding, preparing, or vending of ammoniated tincture of quinine, B.P.
8. That ammoniated tincture of quinine, B.P., has not been, and is not, prepared or sold under the authority of any Royal Letters Patent.
9. That the defendant is not the originator of ammoniated tincture of quinine, B.P., and that ammoniated tincture of quinine, B.P., is made and sold by chemists in general throughout the country.
10. That ammoniated tincture of quinine, B.P., as sold by the defendant would not have been liable to duty if the words "A well-known and highly recommended remedy for influenza and colds. Dose—One teaspoonful in water every four hours until relieved" had not formed part of the label, but as sold by the defendant with those words was liable to duty, unless the last special exemption at the end of the Schedule to the Act 52 Geo. III. C. 150 is applicable to it.

Mr. Dennis intimated that he wished to call evidence as to the meaning of the term "B.P." The article sold by the defendant was ammoniated tincture of quinine, and the words B.P. merely indicated that it was prepared according to the formularies of the Pharmacopœia.

The magistrate pointed out that the summons was for selling 'Ammoniated tincture of quinine, B.P.," and in stating a case he would always add after the name of the article the letters "B.P."

Mr. Kirby said the present B.P. preparation was something different from what it was ten years ago.

Mr. Dennis replied that he was prepared to show that it was substantially the same as in 1853.

Mr. Charles Proctor, an analyst in the Government Laboratory, said the letters "B.P." meant that the preparation was compounded in accordance with the directions given in the Pharmacopœia. He believed the first published formula for this preparation appeared in the 'Annals of Pharmacy and Practical Chemistry,' Vol. 2, published in 1853.

Mr. Dennis said one copy was known to be in existence, but the other side got it first.

Mr. Kirby thereupon handed the book to the magistrate.

Mr. Proctor (continuing) gave the formula as follows:—

Quinine sulphate	32 grs.
Proof spirit	3½ oz.
Solution of ammonia	½ oz.

A formula given in the 1867 Pharmacopœia and the "Additions" of 1874 was really this formula multiplied by 5. It remained unaltered in the 1885 Pharmacopœia, but in 1898 was slightly altered in order to coincide with the metric system there given. The difference was that 1 drachm of the solution now contained 1 3/32 grains of the alkaloid instead of 1 grain. He was cross-examined by Mr. Kirby, and admitted that on comparing the 1898 Pharmacopœia with that of 1885 there was an increase in the quinine and spirit and a decrease of 25 per cent. in ammonia. The maximum dose was now half what it was, and the directions for making the preparation was also altered. He had never seen any reference to its being a proprietary medicine; it was in occasional use before 1853. He could not say that there was substantially any difference between the formulæ in the last two pharmacopœias.

The Magistrate endeavoured to narrow down the issues, and asked Mr. Kirby whether he would admit that the defendant came within the enacting words of the section. Upon Mr. Kirby replying in the affirmative, Mr. Dennis was asked whether he admitted that the defendant would be exempt if he did not come under the title of "first vendor."

Mr. Dennis replied that the defendant was either the "owner or proprietor" or "original or first vendor."

Mr. Dickinson remarked that he could see no difference between original or first vendor. In his opinion that was the person who first sold the article.

Mr. Dennis said he was prepared to admit that the defendant was not the maker or compounder, but he was either the owner or first seller recommending it.

Mr. Kirby then asked the magistrate for a ruling as to whether the 1898 Pharmacopœia constituted a new article, or whether he must prove his case back to 1853.

The magistrate decided to hear evidence.

Mr. Dennis explained that the term "first seller" had three meanings—the first person who ever sold ammoniated quinine, the wholesaler who first sold a particular bottle, and the first person who sold a bottle liable to duty.

Mr. Joseph Ince gave evidence for the defence as an expert in pharmacy. He traced back ammoniated tincture of quinine to 1851. This evidence agreed, in the main, with that of Mr. Proctor. From personal knowledge, from tradition, and from investigation, witness could say that the preparation was never a proprietary medicine. In the 1898 Pharmacopœia there was an alteration in the quantities of all the ingredients, as also in the dose and method of making. In reply to the magistrate, witness said the diminution in the ammonia was more technical than substantial. Cross-examined by Mr. Dennis, he said that the increase in the spirit strength would keep the quinine in solution better. It was never a proprietary medicine; everybody had a right to make it. He did not think any wholesale house had ever sent out the preparation with a recommendation for influenza. He could not say who was the first person who sold ammoniated quinine.

The Magistrate said that no one could answer that question, but that the witness did say that it was not recommended.

Mr. Dennis, dealing with this point, animadverted upon the evidence of the last witness, adding that the defendant could not possibly prove that he was the first person who recommended ammoniated tincture of quinine.

The Magistrate remarked that if he found as a fact that this was so, no High Court would upset it.

Mr. Kirby said he could prove that from 1851 the preparation was sold unstamped. The evidence of this was at Somerset House, because the first person stamping it had to give notice of his doing so, and after that every bottle must be stamped.

The Magistrate asked Mr. Dennis whether the vigilance of Somerset House was not a factor in the case.

Mr. Dennis replied that he had no doubt that where recommended it was stamped. His friend had never proved that recommended ammoniated tincture of quinine was sold unstamped.

Mr. Kirby said that if the defendant was convicted every chemist who sold ammoniated quinine thereafter was liable.

Mr. W. S. Glyn-Jones, called as a witness, stated that he purchased four bottles of ammoniated tincture of quinine from Messrs. Gale and Co., Bouverie Street, one of which was then before the magistrate. He placed the present label upon the bottle. In cross-examination, he added that the bottle and contents, at the time of purchase by the Inland Revenue officer, were his property. The article would not be liable, he thought, even if not in the Pharmacopœia, provided the formula was well known. In reply to the magistrate, witness said the recommendation was not a personal one; the label merely stated that the preparation was "a well-known and highly-recommended remedy"; everybody knew that fact.

Mr. Kirby reminded Mr. Dickinson that he had suggested that the Stamp Duty was a tax on advertisements; he respectfully suggested that it was a tax upon medicines. The exemptions, he argued, supported that view. First was that of goods mentioned in the books of Tonnage and Poundage, and, secondly, the exemption of pure drugs which could be recommended without liability by persons licensed to sell proprietary medicines. Mr. Dennis had suggested that the framers of the Acts had included every medicine they knew. One of the articles sold previous to 1812 was Gregory's Powder, which, not being a proprietary medicine, was never included in the Schedule. The Schedule was merely a list to illustrate what classes of medicines came within the Act. The Act of 42 Geo. III. C. 56, S. 19, referred to the fact that, in order to obviate any doubts that might arise as to the enumeration in this Act, a schedule of articles specifically charged was added. This showed that the draughtsman put down all the articles which he knew had been sold under recommendation—quack medicines, really—even lozenges being in some way or other brought within the general charge, and made liable even if not in the Schedule. The words "by whomsoever made" after Daffy's Elixir showed that articles once liable were always liable. The Act of 1802, Sec. 3, stated that the duties were to be paid by the "owners, proprietors, makers, compounders, or original and first vendors thereof," before the dutiable articles were sold either "wholesale or retail, either for foreign or home consumption." The duty was to be paid by the "first vendor" before the articles went out even to the wholesale house, showing that the "first vendor" was the owner of the formula. This was further borne out, he contended, by the use of the words "first vendor" in 43 Geo. III., C. 73, S. 2 and 3, which stated that any person receiving from the "original or first vendor" any articles liable to duty, unstamped without returning them or informing the Commissioners, should forfeit £20, and that all packages sent by any "first vendor" to any "retail vendor" should be stamped "medicines." The defendant claimed the exclusive right to vend the particular bottle he sold, as well as anything else in his shop, so that, if the contention of Somerset House was right, nothing in the general charge was taken out by the exemption. Mr. Dennis suggested that the "first vendor" was the man who vended the article with the dutiable label upon it, but the article was not made new or different by putting a different label upon it. The label was only one of several ways of making the mixture liable to duty. It might be advertised in a price list or pamphlet, or a row of bottles might be placed in a window, one only of which bore a recommendation, and if Mr. Dennis was right, then only the bottle so labelled was liable. What meaning could be attached to the word "thereof" in the phrase "original or first vendors thereof"? Was it the article itself or the bottle containing it? Section 14 (42 Geo. III. C. 56) read, "any package . . . or other enclosure of a preparation or composition liable to duty," plainly showing that the drug and not the package was liable. The Act of 52 Geo. III., C. 150, S. 1, stated "that the duties by the said recited Act imposed on the drugs, herbs, pills, waters . . . preparations and compositions mentioned in the Schedule thereto annexed, shall be deemed and taken to extend to, and attach upon, the several drugs . . . preparations and compositions mentioned and set forth in the Schedule." That provision had nothing whatever to do with whether the medicines were enclosed in packets or not, and the prosecution, moreover, had summoned Mr. Glyn-Jones for "duty liable on medicine." If the Acts had any meaning at all, it was that once a drug became liable, it was liable for ever. The general charge of duty in the Act of 52 Geo. III., C. 150, states that all articles are liable "which have at any time heretofore been, now are, or shall hereafter be" recommended. The only way they could be taken out was by exemption. An article was not the less liable because it had been recommended. Otherwise a man might spend a large sum in advertising a proprietary, but before a bottle was sold cease advertising. He might thus get the full benefit of his recommendation without any liability. If Mr. Glyn-Jones was the first vendor of ammoniated tincture of quinine as a dutiable article then every bottle subsequently sold by anyone must be stamped. Take the case of ipecacuanha wine, which was useful as an expectorant or an emetic. Mr. Glyn-Jones, knowing this, might put upon a label the dose for a cough as distinct from the emetic dose; was he liable whether other vendors did so or not?

The Magistrate thought it was a strong point that chemists were privileged; if that was not so, what was the nature of the exemption?

Mr. Kirby replied that if the label in question made the article liable, the exemption applied to nothing.

Mr. Dennis, dealing with the exemption, said that were it not for that clause, "magnesia tablets" would have to pay duty, as it was mentioned in the Schedule. Duty would have to be paid also on any lozenge so mentioned unless they were sold as confectionery, and were not claimed as beneficial for any ailment. At the time the Act was passed many articles such as Adam's Solvent were used as medicines. No one but a chemist could sell that unstamped, and then only provided he did not recommend it.

The duty was not simply on medicines, but on medicines in a bottle with a label. The owner or proprietor was someone who could have physical possession of the article, and not the proprietor of the recipe before the first sale. If the article was delivered out for sale to an agent the owner must pay the duty. If he had them compounded for him, the compounder must see that the duty was paid before he delivered the article, or the first vendor must do so. Therefore the first vendor was the first vendor of the article, and not of the class of article. The first vendor was the first person who had possession of the article, and not the man who first brought out the formula in 1853.

At this stage the case was further adjourned to Wednesday, June 25, at 2 p.m., the magistrate intimating that he should not require any further evidence for the defence.

Sale of Poisons (Ireland) Act.

Prosecution at Dromore.

At Dromore West Petty Sessions, on Wednesday, June 4, before Mr. R. D. Crotty, R.M. (Chairman), and Mr. T. Tiernan, Sergeant Barret, Inspector of Weights and Measures, summoned a local shopkeeper for selling a packet of Sandford's Rat Poison, also for keeping his shop open for retailing and dispensing poison.

The defendant pleaded that he got the poison for his own use, and that the only packet he sold was the one purchased by the sergeant, but, notwithstanding that, the magistrates inflicted a penalty of five pounds. The magistrates were unable, owing to a decision by the Lord Chief Justice, to convict in a less penalty, but they recommended the defendant to memorialise the Lord Lieutenant, with a view to having a portion of the fine remitted.

Prosecution at Stradbally.

At Stradbally Petty Sessions, Queen's County, Ireland, before Colonel Cosby and Mr. T. Timmins, M. Patrick Whelan, general merchant at Stradbally, was summoned by Sergeant P. Daly, R.I.C., for having, on March 10, sold a bottle of vermin-destroying paste containing phosphorus, and on April 29 sold a package of Cooper's Sheep-dipping Powder containing arsenic, without being properly qualified to sell poisons.

Sergeant Daly proved that the sales of the articles took place to himself on both occasions, and put in a certified analysis of their contents made by Professor Tichborne.

The Defendant said he had been selling the articles for twenty years without knowing that he was breaking the law, and since the service of the summons he had returned a package of the sheep-dipping powder.

The Magistrates said Mr Whelan was a respectable trader, and that they believed he had acted in ignorance of the law, and imposed a fine of 1s. with 2s. 2d. costs in each case.

Apothecaries Act.

At Halifax County Court, on June 3, Judge Cadman had before him George Pearson, who appeared at the instance of the Apothecaries' Society, London, on a judgment summons. Mr. Willans (Messrs. Storey, Willans, and Storey), who appeared for the Society, recalled that the Society obtained a penalty against defendant for £20 (see *P.J. ante*, p. 374). That amount was ordered to be paid by instalments of £1 per month. Defendant had paid nothing. He was now employed as a dispenser with a weekly wage of 30s., and house rent free. Defendant said he could not pay, as he had been pauperised by the action of the Apothecaries' Society. His Honour made an order for payment in twenty-eight days.

Sale of Food and Drugs Acts.

Baking-Powder.

At Stockport, on May 28, Samuel Johnson was charged with selling baking-powder which contained 63·27 per cent. of rice starch and 14·37 per cent. of tartaric acid. There was an excess of tartaric acid, but the offence was the inclusion of so large a quantity of rice starch, 20 per cent. being said to be an ample quantity. It was pointed out that the firm from whom defendant bought the baking-powder guaranteed it "free from alum or any other substitute for tartaric acid."

Dr. Meredith Young said the powder had either been carelessly or ignorantly mixed. The quantity of rice starch would increase the bulk and decrease the value of the active parts.

Mr. William Thomson gave it as his opinion that 20 per cent. was a sufficient quantity of rice starch.

Mr. Potts, for the defence, contended that the starch was necessary, and as there was no standard fixed for the proportion the purchaser could not be prejudiced. The fact that there was an excess of tartaric acid showed that there was no intention to defraud. It was simply a question of quantities, and no fixed quality had been laid down.

The magistrates imposed a fine of 5s. and £3 5s. costs.

Black Pepper.

At Teddington Sessions, on Monday, June 2, Eliza Craigie, grocer, Teddington, was charged with having sold pepper certified to be adulterated to the extent of 10 per cent. with mineral matter

Inspector Anderson proved the purchase of a quarter of a pound of black pepper, for which he paid 2½d., and the analyst certified that the sample was adulterated to the extent of 10 per cent. with mineral matter, that opinion being based on the fact that it contained 18·5 per cent. of mineral matter, whereas genuine black pepper should not contain more than 8·5 per cent.

Mr. F. W. Beck, who appeared for the defendant, asked the Bench to forward the reserve sample to Somerset House for analysis, and the hearing was adjourned in order that the sample might be sent.

Camphorated Oil.

At Chatham, on June 2, Thomas Rains, of Rainham, was summoned for selling camphorated oil which was not up to the B.P. standard of strength.

Defendant, who pleaded guilty, stated that the strength of the oil had been lost through evaporation. He was fined 5s. and 15s. 6d. costs.

Compound Liquorice Powder.

At Sheffield, on June 10, a herbalist named John Turner, carrying on business at 778, Attercliffe Road, Sheffield, was summoned for selling, by his servant, four ounces of compound liquorice powder which was not up to the B.P. standard of quality. Annie Clarke was also summoned for selling the drug.

The Analyst certified that the sample was destitute of sulphur, one of the chief medicinal constituents of the drug, which ought to have been present to the extent of 8·33 per cent.

The Defendant said that Miss Clarke must have misunderstood the inspector, to whom she had supplied pure liquorice powder in which there was no sulphur.

The Inspector stated that he asked definitely for compound liquorice powder.

The Stipendiary Magistrate said he could not see why, when a person asked for compound liquorice powder, it should be bound to contain sulphur.

Mr. H. H. Brown, who prosecuted, said that if a drug was asked for which was named in the British Pharmacopœia it should be supplied according to the directions of the Pharmacopœia.

Defendant was simply ordered to pay the costs, which amounted to 7s.

Postage on Invoices.

At Clerkenwell, Police Court, on June 5, before Mr. Baggallay, Mr. S. Roberts, of Messrs. May, Roberts, and Co., 9 and 11, Clerkenwell Road, was summoned on behalf of the General Post Office, in respect of the sum of 19s. 1d. alleged to be due to the postal authorities for unpaid excess postage.

It was explained that for some months past Messrs. May, Roberts, and Co. had been sending out postal packets as book packets, on which they prepaid the sum of a halfpenny. The contents were invoices of goods supplied, and they were surcharged by the Post Office a penny, and treated as letters, In each case the packet was refused by the addressee, at the instigation of the senders, and when they were returned to Messrs. May, Roberts, and Co. they declined to pay the amount of the surcharge. Under the Post Office Act the decision of the Postmaster-General was final unless there was an appeal to the Treasury. The firm here had so appealed, and the decision of the Postmaster-General had been upheld. The authorities objected to the words "To follow" on the invoices, and also to a cross made on them to draw attention to a footnote. They were regarded as unstamped or insufficiently stamped letters.

The facts were admitted, but it was contended that the packets in question were stamped book packets, and not unstamped letters. It was also contended that the decision of the Treasury was not final, but that the magistrate was judge of the facts.

Mr. Baggallay decided that the packets were unstamped, because insufficiently stamped, letters. That had been decided by the Treasury, and was the whole case. He therefore ordered the defendant to pay 19s. 1d.

It was intimated that the magistrate would be asked to state a case.

Case of Conspiracy.

At the Old Bailey, on June 7, William Prendergast, otherwise Edward Barrow, 58, described as a druggist, pleaded guilty to charges of conspiracy (see *ante*, p. 502) in connection with a bogus company of which he was the head, and known by the title of "Barrow and Way." He was sentenced to fifteen months' hard labour.

Charge of Imposture.

At Yeovil Police Court, on Tuesday, June 3, an elderly woman, who gave the name of Mary Masters, was charged with begging and gathering alms at Hendford on the previous day. Defendant said she was guilty of receiving money, but she had never asked for it.

Mr. Newton, chemist and druggist, Hendford, gave evidence that, on the previous evening, defendant entered his premises and, with a polite bow, said, "Mr. Newton, I presume. My name is Mary Masters." The woman then went on to relate that her late husband had been a chemist in Worcester, and that she was an unfortunate candidate for the Pharmaceutical Society's Benevolent Fund, the benefits of which she had made several unsuccessful attempts to obtain. She had all the names of the chemists on the Society's Council at her fingers' ends; she said she was very "hard up," and asked him if he could give her employment. As she said she was destitute witness gave her a 1s. His assistant afterwards called his attention to a warning letter which had appeared in the *Pharmaceutical Journal*.

Supt. Self, who prosecuted, handed to the Bench a copy of the Journal. The letter was to the effect that Masters had been practising imposture on a large scale by representing herself as a widow of a former member of the Pharmaceutical Society, and that anyone would be doing a good service by handing over the woman to the police.

After an interval the Mayor said the magistrates were very pleased indeed to find that the charges brought before them that day were mostly of a very trivial character. They associated pardon with peace, and, as peace had been declared, it was the unanimous decision of the Bench to dismiss all the cases. The woman Masters was subsequently seized with a fit, and had to be carried out of Court.

ANALYTICAL NOTES.

Santonin in the Urine.—M. Ed. Crouzel points out the urine of a patient under treatment with santonin assumes a characteristic carmine-red coloration on the addition of alkalies. Experimenting on himself with 0·1 Gm., he found that the urine became of a darker yellow colour than the normal, and also lost its usual transparency, becoming milky. Calcium hydrate gave the most delicate reaction. The quantity of santonin mentioned above was sufficient to give indications in all the urine passed during sixty hours. The coloration lasted about half-an-hour, and then the liquid regained its former colour. He concludes that this reaction may be of service in the diagnosis of diseases of the kidney.—*Répert. de Pharm.*, [3], **14**, 149.

Spurious Cream of Tartar.—J. C. White emphasises the necessity of determining the alkalinity of the soluble ash of cream of tartar, in addition to the direct titration, the two figures should give identical results. In a sample examined by him, direct titration gave a figure equivalent to 90·24 per cent., but on complete analysis it was found to consist of approximately 64 per cent. cream of tartar, 31 per cent. superphosphate of lime, and 5 per cent. rice starch. The author concludes that it is much to be regretted that the compilers of the Pharmacopœia did not include the determination of the alkalinity of the soluble ash.—*Analyst*, **27**, 118.

Morphine in Opium.—P. Schidrowitz criticises Reichard's "Silver" method for the determination of morphine in opium, and as a result of several comparative experiments, arrives at the conclusion that in its present form it is useless. He found that if Reichard's instructions were literally followed, it was practically impossible to satisfactorily wash the precipitated silver, owing to the formation of colloidal silver. Up to a certain point, it appeared that the amount of silver precipitated depended not on the amount of morphine present, but rather on the quantity of silver solution employed. Working on 2 grammes of a good sample of opium he obtained figures varying from 10·54 per cent. to 20·98 per cent. of morphine.—*Analyst*, **27**, 117.

Detection of Strychnine with Bromine.—J. C. Wharton thus manipulates the test for the detection of strychnine by means of bromine. The chloroformic extract of the substance to be examined, or the chloroform residue, is placed in a test tube, which is then immersed in a larger test tube, containing boiling water. When all the chloroform has evaporated a few drops of a mixture of sulphuric acid and water in equal parts are added. The small tube is then replaced in the tube containing the hot water, and the contents dissolved in the acid by shaking. When the solution is complete, the tube is removed from the hot water, and a flask containing bromine is held over the mouth so that the tube may become filled with bromine vapour. It is then shaken, and replaced in boiling water in order to drive off excess of bromine. If strychnine be present in appreciable quantity a carmine red colour appears, which increases in intensity as the bromine evaporates. If but little strychnine be present only a small quantity of bromine should be employed, and for this it is convenient to use a solution of bromine in chloroform containing one drop of bromine in two or more C.c.—*Pharm. Zeit.*, **47**, 180, after *Journ. Pharmacol.*

PHARMACEUTICAL SOCIETY OF IRELAND.

At the monthly meeting of the Council, held on Wednesday, June 4, the President, Mr. George Beggs, occupied the chair.

The President, after referring to the termination of the war in South Africa as a matter for rejoicing, said it gave him great pleasure in stating that all possible honour was done the Irish Society and himself, as President, on the occasion of the annual dinner of the Pharmaceutical Society of Great Britain, at which he was present as a guest. The members of the British Society appeared to be quite of the idea that the two Societies should work side by side, although on some points they could not work in unison. There were minor matters with reference to which the two Societies might work conjointly together, and that would be an advantage to both Societies and to pharmacy in general.

The Proposed Science Degree for Pharmacists.

The Vice-President said the first matter on the agenda paper was the resumption from last meeting of the consideration of a proposal to apply to the Royal Commission on University Education to provide a University degree in science for Irish pharmacists. It was desirable to postpone the consideration of the subject for the present.

The course suggested was agreed to.

Letter from the Privy Council.

The following letter from the Clerk of the Privy Council, Mr. J. B. Dougherty, to the Registrar was read:—

"Sir,—With reference to the proposed regulation adopted by the Council of your Society on the 1st of January last, making a course of elementary chemistry compulsory in the case of candidates for the pharmaceutical Licence, I am directed by the Lord Lieutenant to inform you that His Excellency and the Privy Council have declined to approve of the regulation, considering that the objections set out in my letter of the 6th February have not been removed by your reply, and that, as the examination in elementary chemistry is compulsory in the case of these students, it may be left to them to avail themselves of the best means at their disposal for acquiring the knowledge necessary for passing such examinations."

The Vice-President said the Castle authorities did not seem inclined to foster pharmacy or raise it to a higher than the existing standard. They seemed to think that if a man ground up sufficiently to scrape through an examination, it did not matter whether he was thoroughly prepared or not. In view of that, it would be ridiculous for the Council to continue to spend the funds subscribed by the members of the Society for the educational purpose that they had been applied to, when the authorities would not assist in any way, and threw cold water on the Council's efforts. They did not appear to understand that it was necessary for a man to be properly trained in order to be a pharmacist.

The President pointed out that the Council gave the subject every attention at the request of the Government Inspector, who had pointed out the deficiencies of the students in that particular subject. Those who did take out the lectures at the Society's school were the better men at the examinations, and the Inspector strongly advised that the courses should be taken out, but the authorities seemed to throw cold water on anything that the Council did to advance pharmacy.

Mr. Kelly said the letter from the Privy Council was most disheartening. The Council had gone to the trouble and expense of establishing a school and engaging a teacher in order to afford their students an opportunity of learning theoretical chemistry, and they only charged a guinea for a four months' course of lectures.

The President said he feared the school would have to be given up, as it was useless to throw away the Society's money. The school should not be carried on next session unless the Council was sure of a certain number of students, as there was no use in running a school which was appreciated neither by the students nor by the authorities, who should look at the matter in a different light. The school was, in its way, second to none in the country, and as long as attendance at it was supposed to be compulsory they had a very good attendance. Now that the students had got the cue that it was not to be compulsory the attendance had fallen off.

Mr. Smyth asked if it would not be well to have an interview with Sir George Duffey in order to see if anything can be done.

The Vice-President said the Council would now have a very sufficient answer to any strictures that the Inspector might pass in future with respect to candidates not knowing elementary chemistry.

Membership of the Society.

The Vice-President said he desired to call attention to the fact that a number of licentiates of the Society were using the title of "M.P.S.I.," although they were not members of the Society at all. No doubt that might occur through inadvertence, but they had no right to use the title unless they subscribed to the Society. If the practice did not cease the Council would have to take the matter up.

The Registrar stated that in any cases that came under his notice he wrote asking for subscriptions, and he got many subscriptions in that way.

BRITISH PHARMACEUTICAL CONFERENCE.

A meeting of the Executive Committee was held at the Pharmaceutical Society's House on Tuesday, June 3, when the chair was taken by the President, Mr. G. Claridge Druce, and there were also present Mr. Naylor (Vice-President), Mr. J. C. Umney (Hon. Treasurer), Prof. Greenish, Messrs. Atkinson, Cummings, Farr, Tyrer and White, Messrs. Ransom and Peck (Hon. Gen. Secretaries), and Mr. Hearn (Assistant Secretary). Mr. Anderson, of Dundee, also attended as a deputation (with Mr. Cummings), from the local Committee. Apologies for absence were received from Dr. Attfield, Dr. Symes, Messrs. Atkins, Beggs, Kerr, Martin, and Wells. The deputation from Dundee (Messrs. Anderson and Cummings) presented the draft programme for the annual meeting, which was as follows:—

PROGRAMME.

Monday Evening, August 11.

8 p.m.—Reception by Lord Provost Hunter and Mrs. Hunter, in Victoria Art Galleries. Music. Refreshments.

Tuesday, August 12.

10 a.m.—Opening of Conference in Chemistry Lecture Hall of University College. Address by the President.

1 p.m.—Luncheon in Queen's Hotel.

2 p.m.—Sessions of Conference resumed.

4.15 p.m.—Special train from Tay Bridge Station direct to St. Andrews—"The grey old city by the sea." Tea. Walk through the West Port and along South Street to the Cathedral and St. Regulus' Tower, returning by the Castle and the Scores to the Golf Links.

9 p.m.—Train by Tayport and Newport, arriving at Dundee 9.45.

Wednesday, August 13.
10 a.m.—Sessions of Conference resumed.
1 p.m.—Luncheon in Queen's Hotel.
2 p.m.—Sessions of Conference resumed and closed.
4.30 p.m.—Afternoon tea in the grounds of University College.
9 p.m.—Dance and Smoking Concert in Gray's Assembly Rooms.

Thursday, August 14.
9.15 a.m.—Sail from Steamboat Pier to Perth in twin-screw steamer "Thistle." ("The scenery is fine as far as Newburgh, then, as we approach the 'Fair City,' it assumes an unrivalled picturesqueness.")
About 10.40 a.m.—Special train from West Station to Perth for those who do not go by steamer.
About 11.40 a.m.—Special train from Perth to Comrie through Strathearn. ("Combines types of all the most exquisitely beautiful scenery to be found in the Highlands.")
1 p.m.—Luncheon in West-end Public Hall, Comrie.
3 p.m.—Drive to St. Fillans. ("No spot in Britain so thoroughly embodies our most cherished conceptions of Arcadia as St. Fillans.")
4 p.m.—Return drive to Comrie.
5 p.m.—Tea in Public Hall, Comrie.
7.30 p.m.—Train leaves Comrie for Dundee.
9 p.m.—Arrive in Dundee.

Mr. J. C. Umney proposed, and Mr. Ransom seconded, that the hearty thanks of the Committee be accorded to the deputation for their kindness in coming to present the programme. This being carried, the programme, after one or two slight alterations, was unanimously approved.

The Secretaries reported that, after considerable correspondence, etc., the railway companies had decided that they could not issue reduced fare tickets to Dundee, but suggested that members of the Conference should avail themselves of the tourist tickets. Arrangements have been made with the Dundee, Perth, and London Shipping Company to take members of the Conference and their friends at single fares—22s. 6d., first cabin—for the double journey. The steamers sail from the Dundee Wharf, Limehouse, and the journey takes about thirty hours.

Mr. W. T. Grice, F.C.S., of Calcutta, was appointed Colonial Secretary for Bengal.

An invitation to send delegates to the Golden Anniversary of the American Pharmaceutical Association was received. It is hoped that some prominent members of the Conference will be able to arrange to be present.

A letter was read from Mrs. Martindale acknowledging the vote of condolence passed at the last meeting.

Several gentlemen, having been duly nominated, were elected to membership.

CHEMICAL SOCIETY.

At a meeting held on Thursday, June 5, at Burlington House, Piccadilly, Dr. Thorpe was in the chair. The first paper was communicated by Mr. Baker on the

Action of Ungerminated Barley Diastase on Starch.

In the experiments conducted by the author the isolated diastase, rather than a barley extract, had been used, thus ensuring the purity of the products. The diastase was obtained in the usual way by extraction with 20 per cent. alcohol and subsequent precipitation by the addition of stronger alcohol. Its action on soluble starch was studied, and it was found that if the action be allowed to continue for six hours only two substances, dextrine and maltose, are formed; if, however, the action be prolonged over that time small quantities of glucose appear. The enzyme acts fairly readily on the starch granule, and gives only two products.

Dr. Thorpe, after complimenting the author, said he should like to draw attention to a new brewing process by which conversion of starch was effected in a very short time. He gave no details of the process, which is at present only on trial, but said he had seen it in operation, and he knew the conversion to be very effectual. If successful on the large scale it would do away with the mash-tun, and revolutionise the whole process of brewing.

A paper was then read by Mr. Sodeau on the

Decomposition of Chlorates with Manganese Dioxide.

This was a continuation of work already described by the author. He finds that when potassium chlorate and manganese dioxide are heated under diminished pressure there is no increase in the amount of chlorine produced. He does not find himself in agreement with the usually accepted statements as to the cycle of changes which these substances undergo when heated. He considers that it is possible that a higher oxide of manganese is first formed.

Professor MacLeod said it was some time since he had considered the subject, but at the time when he suggested the cycle of changes which had been referred to, he thought the explanation he had given was correct, as certainly each step could be demonstrated.

The next paper was read by Mr. West on

Phosphorus Tetroxide.

After referring to the well-known oxides of phosphorus, P_4O_6 and P_4O_{10}, the author said that the existence of tetroxide had been disputed. By heating the trioxide in a sealed tube with carbon dioxide the tetroxide and phosphorus were obtained; the latter was then distilled off under reduced pressure, and finally the tetroxide was distilled, when it was obtained in deliquescent crystals. These crystals on solution in water form phosphorous and metaphosphoric acids. Considerable difficulty was experienced in determining the vapour density of the substance, as at a temperature of 1,000° no gas was given off, and not until 1,400° was reached could any determination be made. The mean of the results gave the figure 229·3, which agrees most nearly with the formula, P_8O_{16}. The specific gravity of the substance is higher than that of either of the other oxides.

Dr. Thorpe suggested that heating this body in a sealed tube with sulphur would probably result in the breaking up of the complex molecule.

OBITUARY.

Bennett.—On June 6, William Bennett, Chemist and Druggist, Newark. Aged 76.

Green.—On June 5, Hugh Green, Chemist and Druggist, Hull, formerly of Darlington. Aged 28. Mr. Green, who was the youngest son of the late Mr. F. Green, of Ketton Hall, Darlington, served his apprenticeship with Mr. James Robinson, M.P.S., Darlington, and some time ago he commenced in business on his own account at Hull. His death, which was due to typhoid fever, is regretted by a wide circle of friends.

Harrison.—On June 5, William Harrison, Chemist and Druggist, Clitheroe. Aged 65.

Neal.—On June 2, William Neal, Chemist and Druggist, Croydon. Aged 47. Mr. Neal had been connected with the Pharmaceutical Society since 1888, formerly as an associate and latterly as a member.

Palmer.—On April 1, Frederick William Palmer, Chemist and Druggist, Ramsey (Hunts.). Aged 72.

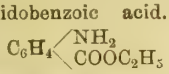
Read.—On May 27, Henry Read, Chemist and Druggist, Altrincham. Aged 68.

Smith.—On June 5, John Hunton Smith, Chemist and Druggist, Birkenhead. Aged 83.

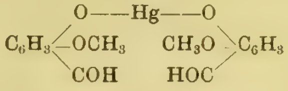
Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

ANÆSTHESIN. This name is given by Ritsert to the ethyl ester of *p*-amidobenzoic acid. It is a white, inodorous, tasteless powder, melting at 89·5° C., sparingly soluble in cold water, readily soluble in acetone, ether, benzene, chloroform, ethereal, and fat oils. The solutions do not alter even when exposed to light. Anæsthesin acts as a local application by relieving pain. Professor C. v. Noorden has given it internally in doses of from 0·3 to 0·5 gramme twice daily in affections of the stomach, also for relieving cough and for irritation of the palate or throat, in the form of pastilles containing from 0·02 to 0·04 gramme. Anæsthesin hydrochloride is soluble in 100 parts of water, and a solution of that strength can be used for injection, but it causes an unpleasant burning sensation. A solution one-fourth the strength has been found to act as an anæsthetic. Dr. Dunbar recommends addition of sodium chloride and morphine in the following proportions:—Anæthesin hydrochloride, 0·25; sodium chloride, 0·15; morphine hydrochloride, 0·005 to 0·015; water, 100; the solution can be sterilised. Anæsthesin is not poisonous, and may be freely injected as may be requisite, according to the extent of the part to be operated upon.—*Berlin Klin. Wochenschr.*, 1902, 17.


$C_6H_4{<}^{NH_2}_{COOC_2H_5}$

MERCURY VANILLIN. This is a white tasteless powder, insoluble in water, but soluble in weak acids; it has a composition represented by the formula—


$$\begin{array}{ccc} & O—Hg—O & \\ C_6H_3{<}^{OCH_3}_{COH} & & {}^{CH_3O}_{HOC}{>}C_6H_3 \end{array}$$

and is thought to be adapted for medicinal use.—*Nouveaux Remèdes*, 1902, 197.

PHOSPHORUS SESQUISULPHIDE. E. G. Clayton has examined various specimens of commercial phosphorus sesquisulphide, and applied Mitscherlich's test to each in the following way:—20 Gm. of the compound was distilled with 100 C.c. of 10 per cent. sulphuric acid in an egg-shaped flask connected with a spiral condenser, the operation being conducted in a dark room. The very small amount of light emitted by the lamp was screened from the condenser and receiver, which were in complete darkness. In each case 40 C.c. of liquid was distilled over. The results with comparatively pure specimens were absolutely negative, not the faintest luminosity being perceptible in any part of the apparatus, and it is said to be evident that pure, or even approximately pure, phosphorus sesquisulphide gives no reaction with Mitscherlich's test, though very crude specimens of phosphorus sesquisulphide no doubt occasionally give Mitscherlich's reaction. The author is now conducting some experiments with the object of discovering whether exposure and keeping can so induce partial oxidation in, or alter the composition of, pure, or nearly pure, phosphorus sesquisulphide as to impart to it after a time the property of giving Mitscherlich's reaction. Meanwhile, the absence both of free phosphorus and of phosphorous oxide from phosphorus sesquisulphide of fair quality and purity and comparatively recent manufacture was clearly indicated by the negative reaction with Mitscherlich's test.—*Proc. Chem. Soc.*, **18**, 129.

HEATS OF FUSION. P. W. Robertson points out that no satisfactory relationship has hitherto been found connecting the latent heat of fusion of substances with their atomic or molecular weights, and states that, in the case of the elements, the following yields satisfactory results. For the elements with atomic weights above 40, which do not expand on freezing, the atomic heat of fusion divided by the melting point on the absolute scale into the cube-root of the atomic volume is a constant. The numbers have a mean variation of ± 10 per cent, the only exception being lead, for which the value of the expression is 25 per cent. below the mean. The latent heats of the following substances were determined:—Thallium = 7·2; lead = 6·45; tin = 14·05; dinitrobenzene = 29·0; phenanthrene = 25; phenylacetic acid = 32; tribromophenol = 13·4; tribromoaniline = 14·4; thiosinamine = 33·4.—*Proc. Chem. Soc.*, **18**, 131.

PASSIFLORA INCARNATA. According to L. E. Sayre the passion flower is rapidly gaining favour amongst American medical practitioners, having won a reputation for the relief of various forms of nervousness, restlessness, and wakefulness bordering on insomnia. Its effect on the circulation is only to reduce temporarily the pulse and arterial tension. Upon the respiration it seems to act as an excitant. Hence it possesses a great advantage, as nearly all other nerve sedatives greatly depress the heart and respiratory apparatus. There appears to be some controversy as to its therapeutic value, but in spite of this it is much in demand and increasingly so. The whole plant is used. It has been exhibited in the form of a fluid extract from the root and stem, or a tincture from the fresh root; also a tincture has been prepared from the fresh stems and leaves. The tinctures were prepared according to the U.S.P. formula for tinctures of fresh herbs.—*Western Druggist*, **24**, 242.

PREPARATION OF MIXED KETONES. E. B. Ludlam shows that Young's device for preparing a simple ketone from the calcium salt of the corresponding organic acid, which consists in decomposing the salt at the temperature of boiling sulphur and removing the products by a stream of carbon dioxide, can be extended to mixtures of calcium salts with very satisfactory results. The conclusions arrived at are:—(1) That the decomposition is not of one molecule, but of two. (2) There is a greater tendency towards the production of the mixed than of the simple ketone. (3) That, for economy, it is advisable to distil the more expensive salt with excess of the cheaper one. By so doing the yield of mixed ketone from a given weight of the expensive salt is increased.—*Proc. Chem. Soc.*, **18**, 132.

INSECTICIDE FOR CATERPILLARS. J. Laborde recommends the following spray as an insecticide for caterpillars which infest fruit trees: Crude fir-tree turpentine, 1·5 kilo.; caustic soda, 200 Gm.; solution of ammonia sp.gr., 0·920, 1 litre; water, 100 litres. The crude fir-tree oleo-resin is heated with twice its weight of water in which the caustic soda has been dissolved; more water is added, and the solution is strained through a fine wire sieve to remove insoluble particles; when cold, the ammonia is added, and enough water to make the final volume 100 litres. The resulting liquid is sometimes clear, but more often opalescent, but it never throws down any precipitate. It is applied to the trees by spraying. It acts by stopping up the spiracles of the larvæ, producing asphyxia, and is stated to be quite harmless to growing plants. —*Comptes rend.*, **134**, 1,149.

CONSTITUENTS OF CATECHUS.

A. G. Perkin and E. Yoshitake give the results of an investigation of the constituents of gambier and acacia catechus, which has been in progress for more than two years. The gambier catechu employed was found to contain two catechins (*b*) and (*c*), while a third (*a*) has been isolated from the acacia catechu examined. Catechin (*b*), $C_{15}H_{14}O_6,4H_2O$, occurs in air-dried, colourless needles, corresponds in its melting point, 175°-177°, with Gautier's (*b*) catechin, and gives, on fusion with alkali, phloroglucinol, protocatechuic acid, and an acid resembling acetic acid. Catechin (*c*), $C_{15}H_{14}O_6$, air-dried, contains no water of crystallisation, and forms colourless prisms (m. p. 235°-237°). It has been found in minute quantity only and yields phloroglucinol and protocatechuic acid on fusion with alkali. Catechin (*a*), $C_{15}H_{14}O_6,3H_2O$ (or less probably $C_{14}H_{14}O_6,3H_2O$) air-dried, forms colourless needles and corresponds in its melting point (204°-205°) with Gautier's (*a*) catechin. Fusion with alkali gave phloroglucinol, protocatechuic acid, and an acid resembling acetic acid. Cyanomaclurin (*Trans. Chem. Soc.*, 1895, **67**, 939), a constituent of *Artocarpus integrifolia*, has been found to contain a phloroglucinol group, and is probably isomeric with the catechins described.—*Proc. Chem. Soc.*, **18**, 139.

MONOCOTYLEDONS AND DICOTYLEDONS.

Miss Sargant, in a paper dealing with the vascular system of seedlings, endeavours to throw some light on the relationship of dicotyledons and monocotyledons. Beginning with the latter a considerable number of Liliaceous seedlings were examined, and a possibly primitive form was noted in *Anemarrhena*, in which the vascular system is simple and symmetrical. Turning to the Ranunculaceæ a very similar arrangement was found in the seedling of *Eranthis hiemalis*. From the fact that in *Eranthis* the two cotyledons are joined for the greater part of their length the suggestion is made that *Eranthis* represents a reduced dicotyledon, and that by further cohesion and reduction the single cotyledon of the monocotyledon has been produced.—*New Phytologist*, **5**, 107.

DECOMPOSITION OF METALLIC COMPOUNDS BY MOULDS.

Dr. O. Rosenheim refers to the biological test for arsenic and the formation of organic compounds of arsenic, selenium, and tellurium by moulds. The biological test for arsenic is said to be characteristic of that substance, and consists in the formation of gaseous organic arsenic compounds, possessing a characteristic garlic odour by the vigorous growth of certain moulds (*Aspergillus*, *Mucor*, and *Penicillium*) in media containing arsenic. When applying this test to beer and sugar which contained selenium and arsenic, the author noticed a pronounced fæcal odour different from that produced by arsenic alone, and it was found that this was due to the presence of selenium, while it was also found that tellurium compounds were decomposed by *Penicillium brevicaule*, giving rise to the production of a very characteristic odour. The odour produced by the decomposition of pure compounds of selenium is of a very disagreeable character, somewhat like that of skatol or mercaptan, whilst the gases formed by tellurium compounds possess a pronounced garlic odour. The test is extremely sensitive, 0·01 Mgm. in 1 C.c. of liquid being easily demonstrated by a vigorous growth of the mould. Unlike arsenic, pure selenium and tellurium are not attacked by the mould. The test is best performed by using sterilised bread-crumbs, to which the sterilised liquid in question is added after infection with the mould.—*Proc. Chem. Soc.*, **18**, 138.

PHARMACOPŒIA REVISION NOTES.

BY W. LYON.

Ferrum Tartaratum.

The Pharmacopœia tells us this substance is "soluble in water," but does not state whether it ought to be quickly or only slowly soluble. Recently two samples came under my notice, both of which were very slowly soluble in cold water. As they otherwise conformed with the characters and tests of the Pharmacopœia, the only explanation available was that some considerable time had elapsed since they were made. Inquiry proved this surmise to be correct, but, in order to test this theory further, a sample was prepared strictly in accordance with the official formula and directions. On testing its solubility immediately after it was scaled it was found to be very readily soluble in cold water. Two months later, however, it had appreciably diminished in rapidity of solution, and from this it may safely be inferred that were it kept for a year or two it would be pretty much on a par with the two samples already noted. As this substance is not a true salt, but, according to the theory of its structure, only a compound in which one of the hydroxyl hydrogens of the hydrogen potassium tartrate is displaced by ferrous oxide (FeO), it was deemed advisable to extend the inquiry to some of the neutral alkaline tartrates. These being more soluble in water than the hydrogen potassium tartrate, and containing hydroxyl hydrogens similarly replaceable, there were grounds for the expectation that the tartarated irons obtained from these would be more readily soluble than that of the hydrogen potassium salt. Preliminary experiments were made with potassium tartrate, sodium tartrate, and sodium potassium tartrate. All of these were found to give tartarated irons readily soluble in water, but the double salt had some advantages over the other two, so it was decided to confine the subsequent experiments to it. It is unnecessary to give the details of these; suffice it that a tartarated iron yielding 28 per cent. of ferric oxide may be made by following the pharmacopœial directions and using the following proportions:—

Solution of Ferric Sulphate	300 C.c.
Solution of Ammonia	480 C.c. or *q.s.*
Sodium Potassium Tartrate	175 Gm.

It is readily soluble in water when freshly prepared, and remains so for a couple of months, but beyond that period a pronouncement cannot be given at present. Even supposing, however, that in this respect it is not superior to the official preparation, there is another point of difference which is worthy of some consideration. It is a well-known fact that preparations of iron have an enhanced remedial effect when given in combination with a laxative, though, strange to say, such a combination has not a place in the Pharmacopœia. Now, a tartarated iron prepared as above would have a slight laxative effect in full doses, and for this reason is to be preferred to the official preparation. Compounds containing a larger proportion of sodium potassium tartrate can be scaled, but the deliquescency increases with the addition of tartrate, and on this account are not to be recommended in scale form. For example, the following formula—

Solution of Ferric Sulphate	100 C.c.
Solution of Ammonia	160 C.c. or *q.s.*
Sodium Potassium Tartrate	220·1 Gm.

when scaled, yields 10·84 per cent. of ferric oxide, but instead of scaling it is much preferable to stop the evaporation of the solution when it weighs 379·4 Gm., and then add 184·7 Gm. of glycerin. The product should yield about 3·7 per cent. of ferric oxide. Thus prepared it keeps well, and if adopted would prove a useful addition to the official list of iron preparations.

Though used to a considerable extent on the Continent, tartarated iron in scale form has never been much in favour with the medical practitioners of this country, and it is questionable if in its present form it is entitled to a place in the next Pharmacopœia.

TINCTURA CHLOROFORMI ET MORPHINÆ COMPOSITA.

It may seem dangerously near rank heresy to plead for an official formula giving a preparation resembling in dose, appearance, and therapeutic action that secret remedy called chlorodyne, for is not the latter a member of the class of preparations known by the obnoxious name of "proprietaries"? The Pharmacopœia is not, however, merely 535 pages of sentiment bound in red cloth; it is a practical manual for the compilation and manufacture of the world's best remedial agents, and, being so, we are entitled to expect official recognition for a preparation having a reputation such as is attached to chlorodyne. The 1885 Pharmacopœia Committee assented to this, but the formula then inserted did not give a satisfactory preparation. At the last revision the Committee, instead of amending it, introduced a new preparation, having perhaps a similar therapeutic action, but differing markedly in appearance, on account of which it cannot be given when chlorodyne is prescribed by physicians or asked for by the public, with the inevitable result that, instead of something approaching uniformity being attained, the public are being given the proverbial "hundred and one" varieties. This change was an unfortunate one, because the different makes of chlorodyne vary considerably in strength, and, as a consequence, when a physician now prescribes chlorodyne he has no certainty that the patient is getting the dose he intends unless he indicates a particular make. If the Committee had inserted an improved formula, even though chlorodyne was not given as a synonym, there would have been an understanding that the official preparation was to be given whenever chlorodyne was prescribed or asked for. It cannot have been for lack of a suitable formula that the Committee in 1898 decided to make a new departure, for numerous satisfactory formulæ have been published; nor can it have been in the expectation that the new preparation would speedily take the place of chlorodyne.

Another fault of the 1885 preparation was the dose. Accustomed as the public have long been to chlorodynes which were quite safe in doses of 30 drops, the introduction of a preparation the maximum dose of which was given as 10 drops was not unattended with danger, because, in spite of the dose being indicated on the label, some patients would persist in taking 20 or 30 drops for a dose. What is suggested to the Pharmacopœia Committee is that, even though the present green tincture be retained, there be introduced a preparation under the name liquor chloroformi compositus, or some such title, resembling in appearance and composition the 1885 tincture, but having a dosage of 10 to 30 drops. The following formula gives a reliable preparation, which does not separate, and is miscible with water:—

Chloroform	60 C.c.
Morphine Hydrochloride	5 Gm.
Diluted Hydrocyanic Acid	45 C.c.
Tincture of Indian Hemp	30 C.c.
Tincture of Capsicum	15 C.c.
Oil of Peppermint	1 C.c.
Mucilage of Gum Acaciæ	120 C.c.
Treacle	240 C.c.
Liquid Extract of Liquorice	120 C.c.
Glycerin	210 C.c.
Alcohol (90 per cent.)	154 C.c.

or sufficient to produce 1 litre.

FERRI ET AMMONII CITRAS.

From a recent examination of commercial samples it is evident some manufacturers pay little or no attention to the pharmacopœial tests for this scale preparation, but, in mitigation of their neglect, it must be acknowledged they do not, strictly speaking, act fraudulently, for although what they sell as citrate of iron and ammonium does not fulfil the pharmacopœial requirements, the yield of ferric oxide is considerably above the official percentage. How this happens I am not able to explain at present; but, judging from the analysis of the sample made by myself, it is possible it is partly due to an excess of ferric hydroxide being present in the citric solution when the solution of ammonia is added. The Pharmacopœia does not specifically state that the citric solution is to be decanted from any excess of hydroxide previous to adding the ammonia, and, being doubtful about the proper procedure, I did not remove the excess before adding the ammonia. To this neglect I am inclined to attribute the 1·5 per cent. excess of ferric oxide, but lack of time has so far prevented me putting this supposition to the test. Some of the manufacturers will perhaps enlighten us as to their usual procedure at this part of the process, so that the new Pharmacopœia may be quite precise on this point. The estimation of ferric oxide by the KHO method was carried out thus:—1 Gm. of the scales was dissolved in 100 C.c. of water and boiled in a flask until free from the odour of ammonia, the mixture decanted into a conical measure. When the oxide had subsided the supernatant liquid was decanted, the oxide then washed with boiling distilled water, and incinerated in the usual way. An endeavour was made to check these results by precipitating an aqueous solution of the citrate with NH_4HS solution, dissolving the precipitate in HCl, oxidising with $KClO_3$, re-precipitating with ammonia, washing and incinerating. The mean of three estimations of Sample (1) by this method indicated 31·1 per cent. of ferric oxide, obviously much too low. This process occupies a good deal of time, and is one in which it is difficult to avoid some loss, as, owing to the bulkiness of the precipitate, small quantities (2 Gm. were taken for each estimation) are inevitable unless the special facilities of a laboratory are available; the above percentage, therefore, indicates the actual loss multiplied by fifty. Reduction of the iron to the ferrous condition by means of zinc and H_2SO_4, and subsequent titration with volumetric $K_2Cr_2O_7$, was next tried, but the results were much too high. The end of the reaction is rendered very doubtful by a brown curdiness which appears on the spots of ferricyanide when the solution is added. This may be obviated by adding some HCl to the indicator. The end is then quite apparent, but the reading is always too high:—

Samples.	1.	2.	3.	4.	Own Make.
Ferric Oxide by incineration	37·5 per cent.	37 per cent.	37·5 per cent.	32·5 per cent.	33·5 per cent.
Ferric Oxide by KHO method	36 per cent.	36 per cent.	37 per cent.	32 per cent.	33 per cent.
Sulphates	present	present	present	absent	absent
Tartrates	absent	absent	absent	absent	absent
Alkali	absent	absent	absent	absent	absent
Soluble in cold water(?)	slowly	slowly	quickly	quickly	quickly

ARISTOQUININE.—Under this name H. Dreser has introduced the di-quinine carbonic acid ester which, on account of its slight solubility, is comparatively tasteless, and therefore to be preferred to other quinine salts. It is readily absorbed, and its therapeutic action is prompt and lasting, while it does not disturb the digestion. Its toxicity on protozoa is stated to be double that of quinine.—*Pharm. Zeit.*, **47**, 210.

THE SOLUBILITIES OF CHEMICAL SUBSTANCES MENTIONED IN THE BRITISH PHARMACOPŒIA (1898).*

BY HENRY G. GREENISH, F.I.C.,
Professor of Pharmaceutics to the Pharmaceutical Society of Great Britain,
and
F. A. UPSHER SMITH.
Demonstrator in the Pharmaceutical Society's Pharmacy Research Laboratory.

Acidum Citricum.

In large colourless crystals.

Qualitative Tests.—Copper and iron were proved absent.

The official test for lead, as officially amended, reads as follows :—"10 Gm. dissolved in 20 C.c. of water, nearly neutralised with ammonia and sufficient of a saturated aqueous solution of hydrogen sulphide added to produce 100 C.c. of liquid, no darkening in colour should result after five minutes (absence of lead)."

This test has been the subject of much comment. Warington[11] suggests that it is perfectly safe in strongly acid solution, but not when neutralised with ammonia. Howard[12] recommends Warington's test, without ammonia, in six-inch cylinders. Warington,[13] in an exhaustive paper on the detection of lead in both citric and tartaric acids, recommends 10 Gm. of citric acid dissolved in water and made up to 20 C.c., to be diluted to 100 C.c. with sulphuretted hydrogen water. The presence in the acid of 0·0002 per cent. of lead causes a slight turbidity. In the United States and German Pharmacopœias the citric acid solution is nearly neutralised with ammonia before adding the sulphuretted hydrogen water.

The acid, on titration with standard potash solution, using phenol-phthalein as indicator, gave 99·32 per cent. of citric acid.

Solubility in Water.

Time.	Temperature.	Specific Gravity	Solubility by Assay, as Above.
Three days	62° F.	1·2930	1 in 0·57
Eight days	61° F.	1·3026	1 in 0·51

Result.—Solubility in water, 1 in 0·51 at 61° F.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 0·75 by weight
United States Pharmacopœia	1 in 0·63
German Pharmacopœia	1 in 0·54

Acidum Tartaricum.

In colourless crystals.

This substance complied with the official qualitative tests.

Quantitative Determination, as for citric acid, gave 99·01 per cent. tartaric acid.

Solubility in Water.

Time.	Temperature.	Specific Gravity.	Solubility by Assay.
Eight days	60° F.	1·3187	1 in 0·71
Twenty-four days	58·5	1·3100	1 in 0·82

Result.—Solubility in water, 1 in 0·71 at 60° F.

Comparison with Authoritative Statements :—

British Pharmacopœia	readily in less than its own weight.
United States Pharmacopœia	1 in 0·8.
German Pharmacopœia	1 in 0·8.

Acidum Tannicum.

Proctor[14] has shown this substance to be so variable in composition that we considered it inadvisable to attempt to ascertain its solubility. Preliminary experiments showed it to be soluble in water to such an extent that a thick syrup was formed. Indeed it is doubtful whether any point exists at which a solution of tannic acid can be said to be saturated. At present the Pharmacopœia states that the acid is soluble in an equal part of water.

Alumen.

(1) *Ammonium Alum.*—This substance complied with the Pharmacopœia as regards the qualitative tests; a slight trace of iron was found, but this is allowed.

Solubility in Water.—The solution was prepared by agitation in the usual way. The question arose as to the best means of determining its strength. According to Watts's 'Dictionary' this substance loses twenty-three of its twenty-four molecules of water at 190° C., but in Thorpe's 'Dictionary' the statement occurs that, on heating, the crystals swell, losing water and sulphuric acid. We found a difficulty in getting a constant weight by evaporation of the solution and drying the residue at 190° C., so we had recourse to the more trustworthy gravimetric method of assay by precipitation by ammonia in presence of ammonium chloride, igniting the washed residue and weighing as Al_2O_3.

Time.	Temperature.	Specific Gravity.	Solubility by Assay.
Sixteen days	58·5	1·0459	1 in 9·552
Twenty-three days	59·5	1·0459	1 in 9·837
		Duplicate	1 in 10·07

Result.—Solubility in water 1 in 9·95 at 59·5° F.

Comparison with Authoritative Statements :—

British Pharmacopœia	1 in 10 by weight.

(2) *Potassium Alum.*—This substance was also found to be free from the impurities mentioned in the official text, except a trace of iron, which is allowed. Here again authorities differ as to the effect of heating. According to Watts's 'Dictionary,' an aqueous solution is decomposed when heated with precipitation of a basic salt, especially when dilute; eighteen molecules of water are lost at 61° C., whilst at 100° C. the substance slowly becomes anhydrous and more rapidly in a current of air. Roscoe[15] states that at 92° C. the substance melts in its own water of crystallisation, losing the whole of its water slowly at 100° C., and quickly at high temperatures forming burnt alum. Our experiments tend to show in this case also that the method of evaporation is unsuitable owing to the difficulty (or improbability) of getting a constant weight of known substance for a product. We used the gravimetric method of assay for determining the strength of the solutions.

Time.	Temperature.	Specific Gravity.	Solubility by Assay
Sixteen days	58	1·049	1 in 9·82
Twenty-three days	59·5	1·046	1 in 9·70

Result.—Solubility in water, 1 in 9·70 at 59·5° F.

Comparison with Authoritative Statements :—

British Pharmacopœia	1 in 10 by weight
United States Pharmacopœia	1 in 9
German Pharmacopœia	1 in 10·5

Calcii Chloridum.

This salt complied with the qualitative requirements of the Pharmacopœia.

The official description is so framed that after much consideration we are still unable to determine whether the anhydrous salt $CaCl_2$ or the hydrous salt $CaCl_2 2H_2O$ is intended. We suggest that the anhydrous salt should be official, and that a suitable test should be introduced either to limit the amount of moisture that may be present, or to determine the amount of real calcium chloride by titration with standard silver nitrate solution. The salt heated below 200° C. appears to contain two molecules of water, but these are driven off at a temperature above 200° C.[16]

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* Communication from the Research Laboratory of the Pharmaceutical Society of Great Britain. Continued from page 512.

[11] *Chemist and Druggist*, 1898, I., p. 923.

[12] *Ibid.*, p. 675.

[13] *Journal of Society of Chemical Industry*, 1893, p. 97.

[14] *Pharmaceutical Journal* [3], **20**, 351.

[15] 'Roscoe and Schorlemmer,' Vol. II., p. 560.

Our experiments tend to show that the anhydrous salt is produced at 200° C. Thus fine clear crystals (of the hexa-hydrated salt) were dried by gentle pressure in blotting paper, powdered, and again pressed between blotting paper. On heating for one hour at 200° C. they lost in weight 49·4 per cent. The loss in weight represented by the conversion of $Ca\cdot Cl_2\cdot 6H_2O$ to $Ca\cdot Cl_2$ is 49·3 per cent. Hence the crystals appear to lose $6H_2O$ at 200° C. The same sample after a further three hours' exposure to the same temperature showed no further loss.

Solubility in Water.—The strength of the solutions was determined by titration with standard silver nitrate solution in the usual way.

Time.	Temperature.	Specific Gravity.	Solubility by Assay.
Two days	59° F.	1·4076	1 of $CaCl_2\cdot 2H_2O$ in 0·838 1 of $CaCl_2$ in 1·435
Three weeks ..	60	0·4096	1 of $CaCl_2\cdot 2H_2O$ in 0·820 1 of $CaCl_2$ in 1·411

Result.—Solubility in water, at 60° F., 1 of $Ca\cdot Cl_2\cdot 2H_2O$ in 0·82, or 1 of $CaCl_2$ in 1·41.

Comparison with Authoritative Statements :—

British Pharmacopœia	1 in 1 by weight.
United States Pharmacopœia	1 in 1·5

Remarks.—We recommend that the description of the salt be more definitely worded, and that a test (or tests) be introduced to limit the amount of moisture that may be present.

Cupri Sulphas.

The only impurity found was a trace of iron which is officially allowed.

Solubility in Water.—This salt is easily dehydrated by heat; thus, according to Watts's 'Dictionary,' it becomes anhydrous at 230° C., and Thorpe's 'Dictionary' gives the temperature as 220-240° C. We obtained a constant weight by drying at 230° C.

Time.	Temperature.	Specific Gravity.	Solubility by Evaporation.
Three weeks	61	1·193	1 in 2·80
		Duplicate ..	1 in 2·78

Result.—Solubility in water at 61° F., 1 in 2·79.

Comparison with Authoritative Statements :—

British Pharmacopœia	1 in 3·5
German Pharmacopœia	1 in 3·5
United States Pharmacopœia	1 in 2·6

Ferri et Ammonii Citras, Ferri et Quininæ Citras, Ferrum Tartaratum.

These three scale preparations of iron, not being crystalline, cannot be regarded as definite chemical substances. On shaking with water they dissolve, and the salts being in excess, they form thick, viscous liquids, which eventually become almost solid owing to the permeation of the liquid throughout the whole mass of salt present. It is, therefore, as in the case of tannic acid, not possible to give a definite solubility figure for these scale preparations.

Lithii Citras.

Examined qualitatively only traces of sulphates were found. These are officially permitted. The quantitative test given in the Pharmacopœia was tried. It reads as follows :—" 2 Gm. of the salt dried at 100° C. should lose about 0·38 Gm., at 115·5° C. an additional 0·13 Gm.; and when burned at a low red heat, with free access of air, should leave 0·77 Gm. of white residue, corresponding to 98·5 per cent. of the pure citrate."

The heating of the salt to 100° C. and then to 115·5° C. appears to be based on the results of a paper by Umney,[17] wherein it is stated that the salt loses $3H_2O$ at 100° C. The United States Dispensatory repeats the statement that $4H_2O$ are lost at 115·5° C. It has been shown by Kebler,[18] however, that the salt requires heating to about 140° C. in order to become anhydrous. He heated eight samples of this salt for six hours at 100° C., then six hours at 110° C., eight hours at 115° C., for a further period (not stated) at 115°-120° C., and finally for eight hours at 140° C. The salts in every case lost an additional percentage of moisture when heated to 140° C., this additional loss (at 140° C.) ranging from 2·07 to 7·06 per cent. of the weight of substance taken. An experiment was set on by us to determine whether the salt became anhydrous at 140° C. Weighed quantities were dissolved in water, dried first on a water bath, and then at 140° C. Theory requires a loss of 25·5 per cent. to render the hydrated salt anhydrous. After three hours' heating at 140° C. the loss was 23·6 per cent., and after nine hours the loss was 24·3 per cent., hence it appears that prolonged heating at this temperature would drive off the whole of the water. It would seem to be advisable to alter 115·5° to 140° C. if it be desirable to include so tedious a test in the Pharmacopœia. The time taken to dry the salt by the official directions is excessive. If in addition the process of ignition is carried out, the whole operation occupies a considerable amount of time. In igniting the salt it is found that if a "low red heat" be employed, as recommended in the Pharmacopœia, the residue remains black even after a day's heating. It requires the heat of a blowpipe to complete the ignition. At the latter temperature, however, the carbon quickly burns away. We obtained 0·75 Gm. of white residue instead of 0·77. According to Proctor,[19] the best commercial samples yield between 0·75 and 0·77 Gm. Merck[20] states that commercial samples yield less than 0·75 Gm. of residue on ignition.

Undoubtedly it is better that the residue should be below 0·77 than above that figure, because a higher figure would show contamination with potassium, sodium, or other carbonates, the equivalent weights of which are higher than that of lithium carbonate.

We would suggest that the Pharmacopœia might direct the salt to be first dehydrated at 140° C., and the loss noted, and then ignited in order to obtain the weight of the fixed residue.

Solubility in Water.—The strength of the solutions was determined by evaporation on a water bath, treatment with strong sulphuric acid and subsequent ignition, the residue being weighed as sulphate.

Time.	Temperature.	Specific Gravity.	Solubility by Assay.
Two months......	59° F.	1·1870	1 in 1·64
		Duplicate..	1 in 1·63

Result.—Solubility in water, at 59° F., 1 in 1·635.

Comparison with Authoritative Statemen's.

British Pharmacopœia....................	1 in 2 by weight
United States Pharmacopœia	1 in 2
Lyman F. Kebler	1 in 1·91

Remarks.—Kebler's figure, as found by experiment, was 1 of anhydrous salt in 2·434 of water at 15° C. Kebler calculated from these figures that the solubility of the hydrated salt was 1 in 1·91, and in doing so apparently fell into an error.

It is obvious that, in calculating the solubility of a hydrous salt from that of an anhydrous salt the water of crystallisation must be deducted from the amount of water necessary to dissolve the anhydrous salt. Thus Kebler found that 1 Gm. of anhydrous lithium citrate required 2·434 Gm. of water at 15° C. to dissolve it. This solution may be regarded as containing 1·343 Gm. of crystalline salt in solution, and the water in which this is dissolved is 2·434 − 0·343 = 2·091 C.c. Therefore, 1·343 Gm. of crystalline salt require 2·091 C.c. of water at 60° F., or 1 in 1·55, a result which closely accords with our own (1 in 1·635 at 59° F.).

(*To be concluded.*)

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[16] Newth's 'Chemistry' (1895), p. 535.

[17] 'Year-Book of Pharmacy,' 1875, p. 559.

[18] *American Journal of Pharmacy*, 1899, p. 137.

[19] 'Manual of Pharmaceutical Testing,' 2nd edition, p. 124.

[20] *Chemist and Druggist*, 1893, p. 348.

THE ADULTERATION OF DRUGS.*

BY LYMAN F. KEBLER.

Many of the reports bearing upon the adulteration of food products and medicinal preparations which come to hand from time to time, are of such a character that at the time of reading we are almost overawed by the number of sophisticated or adulterated articles reported. Tables are presented which would indicate that from 50 to 75 per cent. of the articles examined are adulterated or spurious. If this is really a correct representation of the facts as they exist, we would be compelled to admit that this country (U. S. A.) must be a veritable happy hunting-ground for the manipulator. But upon closer examination it will be found that these reports are "reports of adulterations" in the full sense of the word, and that, when a man starts out to find adulterations he is usually successful. Taking the whole field into consideration, the author does not believe that these reports present the actual existing condition of affairs.

In the course of some of the writer's notes to the *Pharmaceutical Era*, it was stated, in substance, that while the number of adulterated articles reported is found to be comparatively large, the proportion of intentional adulterations actually met with do not exceed 5 per cent. Indeed, extended experience in examining the vast number of articles that come up for investigation in the actual course of business shows that the adulterations practised are actually very much less than this. Such a statement may seem somewhat radical, but it is based upon the results obtained in the chemical laboratory of a firm which submits to a strict examination nearly all the products it handles.

The subject of the adulteration of food and drugs is a well-worn theme. Many able reports have been presented time and again, and the writer believes that such reports have had much to do by way of educating both the druggist and the public, and that adulteration has become minimised more largely as the result of these educational efforts than through legislation. The object of this report is precisely along the former line. It is intended to be educational.

The adulterations herewith described are typical in character of what may be expected to be met with, and more than that it is not deemed necessary to give.

For convenience of reference, the articles described are divided into chemicals, oils, simple drugs and allied products.

CHEMICALS.

The first subject to be considered is chemicals.

AMMONIUM ACETATE is quite a difficult chemical to make, especially in warm weather, being very prone to liquefy, and even to dissociate. This probably accounts for the fact that an article is frequently supplied which is freely soluble in water and alcohol, having a mousy odour, a melting point of 82° C., and a boiling point of 222° C. These are the physical properties of acetamide, and acetamide it was. It seems to be the custom of certain manufacturers to deliver this article when ammonium acetate is asked for. No manufacturer is justified at any time, either for convenience or otherwise, to deliver one article for another, even though they resemble each other very closely, both chemically and physically. But in view of the fact that the physiological uses of ammonium acetate are well known, and those of acetamide are as yet obscure, such a substitution must be considered high-handed.

CALCIUM PHOSPHATE, PRECIPITATED.—An article of fine physical appearance, proved upon examination to contain 30 per cent. of calcium carbonate. The presence of this impurity is not incidental to the manufacture of calcium phosphate, as some one has intimated. Anyone using such a phosphate of calcium for the purpose of diluting powdered opium in manufacturing laudanum would have no end of trouble before the product is finished.

"**CHROMIC ACID.**"—Quite a number of grades of "chromic acid" are regularly supplied by manufacturers, and unless great care is exercised the purchaser will find himself in possession of an article containing about 40 per cent. of chromic acid and 60 per cent. of sodium acid sulphate. This product is manufactured by mixing the molecular portions of sodium bichromate, dissolved in a suitable quantity of water, with sulphuric acid, according to the following equation:—

$$Na_2Cr_2O_72H_2O + 2H_2SO_4 = 2CrO_3 + 2NaHSO_4 + 3H_2O.$$

The mixture is then simply dried, and the product resulting placed on the market as chromic acid. There is considerable variation in the physical appearance in the best grades of chromic acid, and it is easy to be deceived. The only safe plan is to estimate the actual content of chromic acid. A short, rapid method has been worked out by the writer, and will be found in the *American Journal of Pharmacy*, 1901, page 395. The presence of sodium is readily established by the sodium-flame test, and the sulphate by means of barium chloride.

SOLUBLE BLUE.—Ultramarine blue has been supplied when soluble blue was called for, and a great contention was raised when an unfavourable report was submitted. This product is insoluble in water, but care must be taken not to be deceived, inasmuch as the ultramarine blue is a very fine powder, and remains suspended in the water for some time. It is best to make up the solution or mixture, and let it stand for twenty-four hours, and if the product is ultramarine the blue will subside and leave the upper aqueous layer perfectly colourless, while a soluble blue, under the same conditions, will leave a permanent blue solution.

PODOPHYLLIN, POWDERED.—When a request was made that a sample of this material be submitted, it was found upon examination to consist of powdered mandrake root. This fraud is easily established by its insolubility in alcohol and microscopic appearance.

TANNIC ACID, COMMERCIAL.—For this article powdered Chinese nutgalls have been supplied. Anyone familiar with the odour of these galls can readily detect this substitution. Commercial tannic acid, furthermore, is nearly soluble in water, whereas powdered Chinese nutgalls leave considerable insoluble matter. The microscope can be used to advantage with such a product.

COUMARIN.—A sample of this article was submitted for examination, and proved to be of very good quality. Accordingly, a good-sized order was placed, and when the goods arrived another examination showed the material to possess a melting point from 54·5° C. to 57° C., while the melting point of pure coumarin is 67° C. On heating with a 5 per cent. solution of potassium hydrate at a temperature of about 60° C. for an hour the odour of aniline was developed, and the addition of a solution of calcium hypochlorite to this mixture gave the blue colour reaction characteristic of aniline. On applying Hoffmann's reaction for primary amines the characteristic and disagreeable odour of phenylcarbylamine was obtained, indicating the presence of a primary amine. The percentage of nitrogen was estimated, and on calculating the nitrogen back as acetanilide it was found to amount to 26 per cent.

VANILLIN.—With this article the same difficulty was experienced as mentioned above in connection with coumarin—namely, the sample submitted was of excellent quality, while the consignment of goods ordered from this sample proved to be a substitution. This contract involved several thousand dollars, and at first considerable difficulty was anticipated in getting rid of this substance, which proved upon examination to consist of broken crystals of acetyl isoeugenol, the direct antecedent of vanillin in the manufacture of the synthetic product. The manufacturer, however, took back the goods without a murmur, and paid all expenses involved, including the cost of analysis. The interesting point in this connection is that the melting point of acetyl iso-eugenol is 78° C., while pure vanillin melts at from 80° to 82° C. From this it can be readily seen that had only a superficial examination been made of the goods consigned they would readily have passed as vanillin, inasmuch as the acetyl iso-eugenol had been mixed with a certain proportion of vanillin to give it a distinct vanillin odour. The following methods were employed to establish this impurity:—Microscopically the crystals were abnormal; with concentrated sulphuric acid a beautiful red colour was developed, whereas vanillin gives a lemon-yellow with this reagent; by estimating the per cent. of vanillin; according to the method of Prescott and Hess; modified by the writer and found in the *American Druggist*, March 10, 1899. The solubility was also abnormal, and the presence of acetic acid was established by the conventional methods.

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* From the *American Journal of Pharmacy*.

Another sample of vanillin submitted contained 90 per cent. of specially prepared benzoic acid and 10 per cent. of vanillin. This fraudulent product was easily detected by its odour, solubilities, and melting point. Acetanilide is frequently met with as an adulterant of vanillin to the extent of 50 per cent., and is usually identified by the same test as those described above under coumarin for detecting this substance.

OIL OF BERGAMOT.—On examining a large consignment of this oil, conditionally purchased, it was found to contain an abnormally high, + 28°, optical rotation, in a 100 Mm. tube. The genuine oil is recorded as never having a higher rotation than + 20°. In every other respect the oil tested up well, except that the per cent. of linalyl acetate was somewhat low, namely, 28 per cent. A number of adulterants might be added to bring about this abnormality, such as oils of lemon, orange, and turpentine; but after taking everything into consideration the writer came to the conclusion that oil of lemon to the extent of about 20 per cent. had probably been added.

OIL OF CASSIA.—It seems to be a periodical disease with the Chinamen to adulterate this oil with kerosene, and it is not uncommon to find it adulterated to the extent of 20 per cent. The manipulator, unfortunately, however, sometimes makes the mistake of adding more kerosene oil than the oil of cassia will readily mix with; consequently it has been the writer's misfortune to find oil of cassia to contain a considerable quantity of kerosene floating on top of the cassia oil in an original package. This adulteration has not been met with within the past year, and it is believed that this is chiefly due to the fact that oil of cassia is now largely bought and sold on the basis of a percentage-content of cinnamic aldehyde. It is hoped that this practice will be extended more and more in the trade for the purpose of gradually rooting out the adulterations of oils. It may not be possible to eliminate adulterations entirely by such a procedure, but it is certain that it will minimise it, and that is the best we can probably hope to do in a great many cases at present.

OIL OF COPAIBA.—It is not a new thing to state that balsam copaiba is adulterated with and even substituted entirely by gurjun balsam, but it is doubtful if many have met with an oil adulterated with the corresponding oil of gurjun balsam. There are a number of tests given for detecting the presence of this adulterant, and some of them are of service; but the writer, so far as his experience goes, has the utmost confidence only in the following:—Into the bottom of a test-tube place 1 C.c. of glacial acetic acid (99·5 per cent.), add four drops of pure concentrated nitric acid, and mix well; then add four drops of the oil to this mixture, allowing the oil to float on top. If oil of gurjun balsam is present a reddish or purple zone will be developed between the layer of oil and the acid mixture in a few minutes. No reaction occurs if the oil is pure.

OIL OF PEPPERMINT is probably one of the most liberally adulterated oils that is met with, and especially is this true in mixing a high-grade oil with an oil of poor quality. Several years ago an oil was met with that showed upon examination to contain at least 25 per cent. of added oil of turpentine. It must be remembered that oil of peppermint is liable to contain a small percentage of terpenes, but no such quantity is admissible, and, it also should be said, is quite unnatural. Notwithstanding the fact that this oil contains such a considerable amount of added turpentine, the specific gravity did not fall materially below the recognised lower limit. On reporting this condition of affairs to the vendor he immediately requested the oil to be returned, and he gladly paid all cartage, freight, etc., in addition to twenty-five dollars for analysis, without making a protest. This in itself was ample evidence that the article was known to be of a spurious character.

The presence of the turpentine was established by a fractional distillation: the first fraction began to come over at 150° C., and 40 per cent. distilled before the temperature reached 180° C. The specific gravity of this fraction corresponded to that of turpentine, and other physical and chemical properties unmistakably proved this fraction to be turpentine. By allowing 15 per cent. for the possible presence of a natural terpene, having a boiling point lying between the above limits, which is quite improbable, we still have left 25 per cent. of added turpentine. Genuine oil of peppermint contains very little material having a boiling point below 200° C. The per cent. of menthol, both combined and free, was also estimated, and found to be very low.

It is hoped that the present Committee on Revision will see its way clear to introduce a lower limit of boiling point, and a method for estimating menthol. For the benefit of some the following references to the methods for menthol determinations are given:—Schimmel's 'Semi-Annual Report,' October, 1894, page 438; 'The Volatile Oils,' by E. Gildemeister and Fr. Hoffmann, translated by E. Kremers, page 651, and the *American Journal of Pharmacy*, 1897, page 189.

OIL OF THYME (WHITE).—It is well known that white oil of thyme contains very little genuine oil of thyme, but consists for the greater part of oil of turpentine, distilled over some herbs of thyme. For this the consumer is in a measure responsible, in that he demands a colourless article, which the producer is unable to supply in pure quality, because pure oil of thyme will always be more or less darkened in process of time. It is sometimes stated that pure oil of thyme is not available. This is a mistake. All samples, however, should be carefully tested as to the specific gravity and the percentage-content of phenol bodies.

OIL OF WALNUTS.—Some time ago, while in quest of pure oil of walnuts, several parties purporting to deal in this commodity were requested to send samples and prices for the same. One of the samples was marked (concentrated, white), had a sweetish taste, and was soluble in water. This proved, upon further examination, to be nothing but diluted glycerin, flavoured with a menthol-like body. Another sample proved to consist of about one volume of oil of mirbane and four volumes of ethyl alcohol. The nature of this mixture was easily revealed by fractionation: three-fourths came over near 80° C., then the temperature rose rapidly to 205° C., which is the boiling point of oil of mirbane, and then the temperature remained stationary until distillation ceased. When it is remembered that oil of walnuts is used chiefly by artists in painting, because it dries with a better film than even linseed oil, the reprehensibleness of such an action can very readily be seen.

Oil of Wine (Heavy and Light).—Up to the present time we are in doubt as to the probability of the composition of heavy and light oils of wine. One light oil of wine submitted proved to be fusel oil. The lighter oil usually had a lower boiling point and a lower specific gravity than the heavy oil of wine, but farther than this it was impossible to establish a difference, although there must have been some. The conclusion ultimately arrived at is that the light and heavy oils of wine are undoubtedly obtained in distilling the residue left in the manufacture of ether, the lighter oil being the first portion of the distillate, while the heavier oil is an intermediate or higher boiling-point product. It does seem that a standard for heavy oil of wine should be fixed, especially when it is remembered that it is one of the most important constituents of Hoffman's anodyne.

(*To be continued.*)

ROYAL SOCIETY.

A conversazione of the Royal Society was held on June 18, at Burlington House, Piccadilly. The exhibits were numerous, and only a few of the most interesting can be mentioned.

Mr. J. Mackenzie Davidson exhibited

Stereoscopic X-Ray Transparencies and Negatives.

The large X-Ray negatives were shown by transmitted light in a Wheatstone's stereoscope. In this way the position of a fracture, or of a foreign body in relation to a bone, is readily ascertained.

Dr. Morris W. Travers exhibited his apparatus for

Liquefying Hydrogen.

The gas, under a pressure of about 120 atmospheres, passes through coils in the interior of the apparatus, which are cooled by solid carbon dioxide and alcohol, then in liquid air, and finally in liquid air boiling under reduced pressure, thus attaining a temperature of -200° C. It then enters the regenerator coil, and expanding at a valve at the bottom, is partially liquefied. The liquid collects in a vacuum vessel at the bottom of the apparatus; the unliquefied gas passes upwards through the regenerator coil, cooling the gas it contains, and returns to the compressor.

Messrs. Sanger, Shepherd and Co. showed examples of the application of

Natural Colour Photography,

comprising lantern slides of photo-micrography, polariscopic and spectroscopic work, as well as landscapes, portraits, etc.

Mr. A. C. Cossor exhibited a

New Therapeutic X-Ray Tube,

which is especially designed for the treatment of lupus and the radiography of small areas. This special tube is almost entirely made of lead glass, with the exception of a "window" of soda glass. The lead glass being practically impervious to X-Rays, it is unnecessary to screen the healthy tissues whilst treating the diseased parts. The rays pass abundantly through the window, and can be concentrated where desired.

Mr. A. Vernon Harcourt, F.R.S., exhibited an apparatus for regulating the

Proportion of Chloroform and Air

which is being administered to produce anæsthesia. He also demonstrated the method of determining the amount of chloroform in air, or in solution in a liquid such as blood. This determination depends on the fact that when the vapour of chloroform and steam are passed over glowing platinum wire hydrochloric acid is formed; this is then dissolved in water and titrated with standard alkali.

Mr. W. R. Dunstan, F.R.S., exhibited

Poisonous Fodder-plants and Food-grains.

These illustrate an investigation of the hitherto obscure poisonous action of certain Indian and Colonial fodder-plants and food-grains. All the plants have been proved to furnish prussic acid, and in the cases of *Lotus arabicus, Sorghum vulgare*, and *Phaseolus lunatus*, the poison has been shown to have its origin in cyanogenetic glucoside. *Phaseolus lunatus*, or Lima bean, the seeds of which somewhat resemble haricot beans, is largely cultivated and eaten in India, whence it was introduced from Mauritius. The wild variety contains a cyanogenetic glucoside and a hydrolytic enzyme, from which the prussic acid is formed. The only other seed which has been shown to contain a cyanogenetic glucoside is the bitter almond. This glucoside seems to disappear with cultivation. *Sorghum vulgare*, which is important as a fodder-plant and food-grain in tropical countries, contains a cyanogenetic glucoside when young, but which disappears as the grain ripens. *Lotus arabicus*, a vetch growing on the banks of the Nile, contains the poisonous glucoside lotusin, when young. *Chailletia cymosa* has proved, during the recent war in South Africa, to be highly poisonous to horses and mules. *Lotus australis*, an Australian fodder-plant, is also occasionally a virulent poison. Some Indian and Egyptian drugs and their alkaloids were also shown. *Hyoscyamus muticus*, which grows both in India and Egypt, is said to be a constituent of the narcotics known as "bhang." It has been found to contain hyoscyamine in larger quantity than any other known plant. The plant grows abundantly in Egypt, in the sand of the desert, which on analysis is found to be nearly free from nitrogenous matter. Several specimens of Indian aconites and their alkaloids were exhibited.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

Library, Museum, School, and House Committee.

At a meeting of this Committee, held on Tuesday, June 17, the following reports were presented:—

Attendance in Library.

May.	Total.	Highest.	Lowest.	Average.
London Library	426	24	10	16

Circulation of Books.

May.	Total.	Town.	Country.	Carriage Paid.
London Library	203	103	100	£1 2 10½
Edinburgh Library ..	273	165	108	0 4 1

Donations to the Library (London).

College of Preceptors, London:—Calendar, 1902.

Royal Medical and Chirurgical Society, London:—Medico-Chirurgical Transactions, Vol. 84, 1901.

St. Bartholomew's Hospital, London:—Statistical Tables of Patients during 1901.

Royal Society of London:—Catalogue of Scientific Papers, Vol. 12, 1902.

University of Edinburgh:—Calendar, 1902.

Pharmacy Board of Victoria:—Report for 1901.

Donation to the Library (Edinburgh).

Pharmacy Board of Victoria:—Report for 1901.

Purchase of Books.

The Committee authorised the purchase of the undermentioned books:—

For the Library in Edinburgh.

Ganot, Physics, 16th edition.

Bower and Gwynne-Vaughan, Practical Botany, 2nd edition.

Attendance in Museum.

	Total.	Highest.	Lowest.	Average.
May......................	485	32	14	20

Donations to the Museum (London).

Mr. J. Barnitt, Leamington:—Specimens of Prepared Coral.

Mr. Theo. Wardleworth, Liverpool:—Specimens of Seeds and Fruits of *Pilocarpus microphyllus.*

JACOB BELL SCHOLARSHIPS EXAMINATION QUESTIONS.

First Paper.

June 17, 1902, *from* 11 *a.m. to* 2 *p.m.*

LATIN.

1. Translate into English :—

Primus se Danaum magna comitante caterva
Androgeos offert nobis, socia agmina credens
Inscius, atque ultro verbis compellat amicis;
" Festinate viri; nam quae tam sera moratur
Segnities? alii rapiunt incensa feruntque
Pergama; vos celsis nunc primum a navibus itis?"
Dixit, et extemplo, neque enim responsa dabantur
Fida satis, sensit medios delapsus in hostis.
Obstipuit retroque pedem cum voce repressit
Inprovisum aspris veluti qui sentibus anguem
Pressit humi nitens, trepidusque repente refugit
Attollentem iras et caerula colla tumentem:
Haut secus Androgeos visu tremefactus abibat.
Inruimus densis et circumfundimur armis,
Ignarosque loci passim et formidine captos
Sternimus; adspirat primo fortuna labori.

2. Parse fully :—

Vos celsis nunc primum a navibus itis.

3. Translate into English :—

(*a*) Nonnulli excolatum pingue frigida aqua eluunt, et manibus, non secus atque ceratum mulieres, confricant; ita enim candidius redditur. Alii, postquam lanas lavarunt, coquunt cum aqua in lebete levi igne, et supernatans pingue tollentes, aqua eluunt, excolatumque in fictilem patellam, quæ calidam aquam continet, lineo panno operiunt et soli exponunt.

(*b*) Misce, fiant pilulæ duodecim, quarum capiat æger binas horâ somni, quando opus sit.

4. Translate into Latin :—

(*a*) In this time of danger, they resolved to get together, as quickly as possible both ships and men.

(*b*) The safety of the soldiers, he said, and the honour of their country, were in their own hands; defeated, they had no hope, and no retreat; conquerors, the glory of victory and the spoils of England lay before them. Of victory there could be no doubt.

ENGLISH.

1. Parse fully :—

" What seemed his head
The likeness of a kingly crown had on."

2. Write a short essay on *one* of the following subjects :—

(*a*) The "good old times" compared with the present.
(b) The present relations between Great Britain and her colonies.
(*c*) Compulsory military service.

ARITHMETIC.

1. Buying spirit at 5s. a gallon, I dilute it with water to such an extent that, selling it at 4s. 6d. a gallon, I gain 20 per cent. How much water have I added to each gallon of spirit?

2. Reduce ½ of $\frac{99}{100}$ of $\frac{50}{451}$ of 0·0409 of 1 cwt. 3 qrs. 7 lbs. to the decimal of 2½ tons.

3. A person bought equal weights of sugar at 1fr. 45c. per kilog., and of coffee at 2fr. 70c. per kilog., paying 83fr. for the whole. Find, approximately, how many English pounds of each he bought.

FRENCH or GERMAN.

FRENCH.

1. Translate into English :—

Il y a des capitales qui ne sont que de gros villages; il en est d'autres qui sont des labyrinthes; mais aucune ne semble, comme Paris, avoir été créée et mise au monde pour être le vrai théâtre de la pensée et des passions. Tout grand qu'il est, il n'a rien d'accablant par son étendue; il est harmonieux dans toutes ses parties, agréable à parcourir, commode sans uniformité, riche en points de vue de toute sorte et propre à tous les états de l'âme, admirablement adapté, enfin, à la race ingénieuse, sensible et légère qui l'habite. On parle souvent de l'attachement du montagnard pour sa maison, du paysan pour sa chaumière; mais qu'est-ce que tout cela à côté de l'invincible chaîne qui attache à Paris les plus malheureux de ses enfants? J'entends par là ceux qui y sont nés ou qui sont venus l'habiter de bonne heure; en un mot, ceux auxquels chacune de ses rues, chacun de ses pavés disent quelque chose.

2. Translate into French :—

A proper consideration of the value of time will inspire habits of punctuality. "Punctuality," said Louis XIV., "is the politeness of kings." It is also the duty of gentlemen, and the necessity of men of business. Nothing begets confidence in a man sooner than the practice of this virtue; and nothing shakes confidence sooner than the want of it. He who holds to his appointment and does not keep you waiting for him, shows that he has regard for your time as well as for his own.

GERMAN.

1. Translate into English :—

Es war einmal ein König, der sehr krank war. Er hatte drei Söhne, die gingen hinunter in den Garten und weinten; da begegnete ihnen ein alter Mann, der sie nach ihrem Kummer fragte. Sie erzählten ihm, hi Vater wäre so krank, dass er wohl sterben würde. Da sprach der Alte: "Ich weiss noch ein Mittel, das ist das Wasser des Lebens; wenn er davon trinkt, so wird er wieder gesund; es ist aber schwer zu finden." Da sagte der älteste Sohn: "Ich will es schon finden," ging zum kranken Könige und bat ihn, er möchte ihm erlauben auszuziehen, um das Wasser des Lebens zu suchen, das ihn allein heilen könnte. "Nein," sprach der König, "die Gefahr dabei ist zu gross; lieber will ich sterben."

2. Translate into German :—

The father and child seated themselves on the hill, and saw below the gay and numerous vessels that glided over the river. "There," said Adam, quietly, pointing to the lofty roofs—"there seems to rise power; and yonder (glancing towards the river) seems to flow genius! A century or so hence, the walls shall vanish, but the river shall roll on. Man makes the castle and founds the power—God forms the river and creates the genius."

Second Paper.

June 17, 1902, *from* 3 *p.m. to* 5 *p.m.*

CHEMISTRY.

1. State what is meant by the term atomic weight, and name the experimental data necessary for its determination.

2. What are the reactions that may occur between the following pairs of substances :—

(*a*) Iodine and sulphur dioxide,
(*b*) Arsenious oxide and hydrogen sulphide,
(*c*) Mercury and nitric acid,
(*d*) Potassium ferrocyanide and sulphuric acid,
(*e*) Phosphorus and calcium hydroxide.

Indicate the conditions that will give the most definite products or complete reaction in each of the above cases.

PHARMACY.

1. In applying the process of evaporation to preparations that heat has a tendency to injure, how may the injury be minimised?

2. Write a short note on the pharmacy of the following articles, illustrative of their chief properties :—

Gum acacia,
Scammony,
Mercuric chloride,
Liquid extract of male fern,
Podophyllum resin.

BOTANY.

1. (*a*) Describe three types of root, and account for their different morphological characters. (*b*) What are root hairs?

2. State what you know of latex, and give instances of its occurrence.

MANCHESTER PHARMACEUTICAL ASSOCIATION SCHOLARSHIPS, 1902.

The tests in Latin, English, Arithmetic, French, and German set at this examination were the same as those for the Bell Scholarships Examination, but the following was given as an alternative Latin paper :—

First Paper.

June 17, 1902, *from* 11 *a.m. to* 2 *p.m.*

LATIN.

Translate into English *either* A (Caesar) *or* B (Virgil).

A.—(Caesar).

1. Ariovistus ad postulata Caesaris pauca respondit; de suis virtutibus multa praedicavit: transisse Rhenum sese, non sua sponte, sed rogatum et arcessitum a Gallis; non sine magna spe, magnisque praemiis, domum propinquosque reliquisse; sedes habere in Gallia, ab ipsis concessas; obsides ipsorum voluntate datos; stipendium capere jure belli, quod victores victis imponere consuerint; non sese Gallis, sed Gallos sibi bellum intulisse; omnes Galliae civitates ad se oppugnandum venisse, ac contra se castra habuisse; eas omnes copias a se uno proelio fusas ac superatas esse; si iterum experiri velint, iterum paratum sese decertare; si pace uti velint, iniquum esse de stipendio recusare, quod sua voluntate ad id tempus pependerint.

2. Parse fully :—" Eas omnes copias a se uno proelio fusas esse."

Second Paper.

June 17, 1902, *from* 3 *p.m. to* 5 *p.m.*

CHEMISTRY.

1. Compare the chief *chemical* properties of the elements chlorine, bromine, and iodine. What other groups of elements show comparable relationships between themselves?

2. Define allotropism and give examples.

PHARMACY.

1. Describe the preparation of lead plaster and the changes that take place in the process.

2. Write a short note on the pharmacy of the following articles, illustrative of their chief properties:—

   Milk sugar,
   Tragacanth,
   Iron and ammonium citrate,
   Balsam of tolu,
   Juice of conium.

BOTANY.

1. Show the differences in manner of reproduction between a fern and a flowering plant.

2. After being transplanted, a plant droops for a time. Explain this circumstance.

LETTERS TO THE EDITOR.

Manipulative Improvement in Preparing Collodion.

In the *Pharmaceutical Journal* of June 7 there is a paragraph to the effect that M. E. Bourquelot points out that collodion is more easily prepared by first soaking the pyroxylin in the alcohol, and then adding the ether than by the B.P. method. As Secretary to the Edinburgh Chemists', Assistants', and Apprentices' Association, I would like to draw attention to the fact that the same improvement was shown by Mr. W. B. Cowie at a meeting of the Association held on January 29 (*vide Pharm. Journal*, February 15, 1902), as is now done by M. E. Bourquelot; the reason of the quick solution being also given at the same time.

Edinburgh, June 12, 1902. ALBERT E. KELLY.

The Solubility of Protargol.

Can any reader of the Journal enlighten us on the following?—

℞ Protargol, 5 per cent. in Poroleine. Solve.
Sig. For Spray Solution.

We have failed to dissolve above, though we are informed it can be done.

June 14, 1902. "R. D." (75/2).

Colour of Iodine Mixture.

Ought the following mixture to become colourless, and if not so, why?

℞ Iodi .... ʒiii.
Calc. Chlorid.............................. ʒii.
Sp. Menth. Pip............................ ʒi.
Syr. Glucosi............................... ℥ii.
Aq. ....ad ℥viii.

June 18, 1902. "GLUCOSE" (75/11).

The Acetic Acid Test for Oil of Turpentine.

I have read with appreciation the record of "further experiment" on the above knotty subject, contributed by Messrs. Squire and Caines, which appears in to-day's Journal. The demonstrations adduced and the conclusion arrived at prove that the B.P. test is not "infallible," and, therefore, it is "worthless." They also support Mr. Duncan's contention in favour of oil of turpentine and my contention in favour of glacial acetic acid. Further, they substantiate my plea for the deletion of the glacial acetic acid test for oil of turpentine from the Pharmacopœia and against the introduction of the suggested turpentine test for glacial acetic acid into the Pharmacopœia. Lastly, they confirm the statement I made in my paper that "the addition of less than one per cent. of water to B.P. glacial acetic acid produced immediate separation." In conclusion, I would point out that the reference to my paper has been transposed. I did not say that I "had tested my stock of oil of turpentine with glacial acetic acid but 'always with negative results,' even although the acid responded to the specific gravity and total acid tests." What I said was (*ante*, p. 344):—"Subsequent to the publication of Mr. Alcock's suggested application of the converse of the B.P. test for oil of turpentine as a test for the strength of glacial acetic acid I submitted to that test the stocks I received," etc.—*i.e.*, the stocks of glacial acetic acid. It is highly gratifying that the controversy has resulted in such a substantial gain to chemical physics, but the credit of finding the real crux of the difficulty must be ascribed to Messrs. Squire and Caines.

Glasgow, June 14, 1902. THOMAS DUNLOP.

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply.

APPOINTMENT IN LABORATORY (C. H.—74/34).—Your qualification should suffice if your knowledge of practical chemistry meets the requirements.

PRESCRIPTION FOR MIXTURE (J. E. C.—74/33).—As you say, the doses are excessively small, and it might almost be imagined that the quantities of the potent substances ordered were intended for a single dose rather than an eight-ounce mixture. But it would not be safe to assume that such was the intention, and your best course is to dispense the medicine as ordered, if you are unable to communicate with the prescriber.

INFANT'S POWDERS (D. M.—75/1).—For general use the calomel powder is to be preferred. You should use milk sugar instead of cane sugar as a diluent. A good soothing powder is ammonium bromide, 3 grains; powdered liquorice root, 3 grains, mix. A cooling powder, which is said to be very effective, is composed of potassium chlorate, 2 grains; precipitated chalk, 4 grains.

ZINC OXYSULPHATE CEMENT (J. H. G.—74/30).—To make this cement mix thoroughly two parts of desiccated zinc sulphate with three to five parts of zinc oxide, both in fine powder. The liquid for making the mixed powders into a paste is prepared by dissolving gum acacia, 120 grains, in water, 1 pint, the solution being subsequently filtered. Or, zinc chloride, 10 grains, is dissolved in water, 1 fl. drachm. The cement is mixed and used in the same manner as zinc oxyphosphate cement. It becomes as hard as well-set plaster, and is superior to temporary stoppings of cotton, sandarac, etc., a filling of it lasting in the mouth for two or three weeks.

Special Notice to Correspondents.

ALL COMMUNICATIONS FOR THE 'PHARMACEUTICAL JOURNAL' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should arrive not later than Wednesday morning.

Pharmaceutical Journal.

A Weekly Record of Pharmacy and Allied Sciences.

ESTABLISHED 1841.

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Members of the Pharmaceutical Society must address all communications with reference to the transmission of the Journal, to the Secretary, 17, Bloomsbury Square, London, W.C.

LONDON: SATURDAY, JUNE 21, 1902.

A BLOW AT SECRET REMEDIES.

An important step has been taken in the United States in the direction of establishing a national bureau of medicines and foods, the object of which, broadly stated, will be to check the constantly increasing use of medicines and foods of which the composition is not generally known. According to the *Druggists' Circular*, the initiative in the matter has been taken by the American Therapeutic Society, and it was proposed in the first place to establish standards for medicinal preparations on the market and keep them under analytic and pharmacodynamic observation. It was further proposed to constitute a medium of communication between scientific workers in laboratories and hospitals, who are engaged in the investigation of new medicinal products, and persons engaged in manufacturing such products and placing them on the market. In addition, it was proposed to collect, systematise, and publish accurate information concerning the origin, nature, composition, methods of manufacture, standardisation, pharmacodynamic properties, and therapeutic uses of all medicinal preparations. Finally, it was suggested that manufacturers who comply with scientific and professional requirements might be aided by placing their special brands under the auspices of the proposed bureau. A full account of the steps which have been taken in the matter will be published in the Journal shortly, but meanwhile attention may profitably be directed to a scheme which is perhaps less Utopian than it may appear at first sight.

In a report presented by a committee which was appointed to consider the advisability of establishing such a bureau, it was pointed out that the necessity for authoritative standards for drugs and medicinal preparations is now recognised in all civilised countries, and that pharmacopœias are issued by authority in all such countries except Chili, Greece, and the United States. Although the United States Pharmacopœia is generally acknowledged to be one of the best in the world, it is not an official publication, and it is said to carry very little authority with either physicians or pharmacists. The consequent lack of conformity to official standards, and the flooding of the markets with unauthorised medicinal products of secret or semi-secret composition were stated to be among the causes of the present methods of destructive competition in which quality is sacrificed for price; also of the useless duplication of brands, which has become such a serious annoyance to pharmacists, who are obliged to keep in stock a large number of brands of medicines, which ought to be identical in names and composition. Further, "each manufacturer assumes to be a law to himself and spends a great deal of money and energy to convince the medical profession that his brand is the best—not because his brand corresponds with authoritative standards, but on the ground that he has a standard of his own which he does not divulge for commercial reasons, and which is far better than the standards of his competitors." But, as the Committee was careful to point out, the proper repository of every new medical product is the national pharmacopœia, which should be in fact as well as in theory a representative list of the medicines used by physicians in treating the sick.

The regulations proposed were drafted so as to include the standardisation of food products as well as medicines and, with regard to the maintenance of the proposed bureau, the Committee pointed out that, as the products with which the bureau of medicines and foods would operate would be free to science and commerce—both as to the products themselves and their titles, so that all might compete in their manufacture and sale on equal terms—the results of the work of its experts would be public property. The bureau would, therefore, be entitled to expect support from public funds, private donations, endowments and bequests in carrying on the work of co-operative investigation necessary to the introduction of new products to science and the development of scientific knowledge concerning them. The report proceeded: "As for the work of standardisation, this can readily be accomplished, for the personnel of the bureau will be composed of the experts employed by the manufacturers and experts employed by the educational institutions. The only extra expense to which the manufacturer of standard goods will be subjected is that entailed by the system of checking. That expense will not be large. A fund should be contributed by each manufacturer to enable the institution to pay for the material used in checking, and to pay their experts reasonable fees for the work of standardising his brand."

On presentation, the report referred to was adopted by the American Therapeutic Society and placed in the hands of a special committee of medical men, which heartily endorsed the proposal to attempt to secure co-operation between professional and commercial interests for the purpose of establishing and maintaining the standards of the United States Pharmacopœia for all medicinal products appearing on the market under pharmacopœial names, so that each brand may be uniform in character, purity, and strength, and thus produce uniform therapeutic effects. The special committee also approved of the proposal to establish and maintain standards for extra pharmacopœial products, by the assistance of experts employed by the manufacturers of medicinal products, and of those employed by the educational institutions of the country, especially by medical and pharmaceutical colleges, the intention being that the work of the manufacturers should be checked by that of the colleges.

Further, in order that the work might be carried on in a systematic manner the special committee agreed to the proposal that the different experts should be organised into a corporate body or bureau, and that the work of the bureau should include the introduction of new medicinal products to science by means of the co-operative investigations of those engaged in the practice of the arts of pharmacy, pharmacognosis, pharmacodynamics, and drug therapeutics. Such work, it was pointed out, could not be carried on unless the products offered for investigation were free from commercial control and open to competition under names common to all manufacturers. Hence the plan advocated contemplates that the results of the researches and investigations made by the experts connected with the proposed bureau shall become common property, and that the plan may result in physicians, pharmacists, and manufacturers being brought into fraternal relations, with the common object of promoting progress in the science of pharmacology and in the pharmacologic arts. In fact, as the special committee sums up the matter, it is a plan for "the co-operative practice of the pharmacologic arts, and it recognises that pharmacy, when practised as a profession, not as a commercial business, is a branch of medical practice, and that the practice should be conducted under professional control, and subject to the same ethical rules which apply to the practice of medicine."

CORONATION HOLIDAYS.

In consequence of Thursday, June 26, having been appointed for the coronation of King Edward VII., the *Pharmaceutical Journal* will go to press a day earlier than usual next week. We are also requested by the Secretary of the Pharmaceutical Society to announce that the Society's premises will be closed on June 26, 27, and 28.

ANNOTATIONS.

The New Bye-Laws of the Pharmaceutical Society, which were formally adopted at the special meeting held on May 28 (see *ante*, p. 480), have been approved by the Privy Council, and are now legally binding. The Privy Council has also approved of the addition of liquid disinfectants containing poison to the list of preparations which, when dispensed and sold, must be sent out in bottles distinguishable by touch from ordinary medicine bottles. Chemists should therefore note that Clause 3 of the regulations for the keeping, dispensing, and selling of poisons within the meaning of the Pharmacy Act of 1868, made in accordance with Section 1 of the Act, now reads as follows:—"That in the dispensing and selling of poisons, all liniments, embrocations, lotions, and liquid disinfectants containing poison be sent out in bottles rendered distinguishable by touch from ordinary medicine bottles, and that there also be affixed to such bottles (in addition to the name of the article and to any particular instructions for its use) a label giving notice that the contents of the bottle are not to be taken internally."

The Poisons Committee has not been heard of for some time past, but the London correspondent of the *Scotsman* reminds the world of the continued existence of that body by stating that, although the inquiry of the Committee was finished some time ago, it has been found impossible to prepare the report before the end of the Parliamentary Session. He sagely remarks that the subject is a difficult one, with many delicate ramifications, and as there is an expectation that the work of the Committee will be followed by legislation, it is obviously important that its recommendations should be such as may be readily translated into a Bill. The Committee, therefore, proposes to proceed deliberately in the consideration of its policy, and has arranged to meet in the autumn for the discussion of its report. That course, however, will not delay legislation, because it would be impossible for the Government to introduce a Bill in the present Session. Continuing, the correspondent remarks that the lines of the report have not been finally determined, but, from the nature of the evidence which has been given, it may be assumed that attention will be directed to the inadequacy of the law for dealing with the sale of certain kinds of poison, as well as to the alleged inconvenient conditions imposed upon trade by the present state of the law. It is necessary, he says, on the one side, to liberate trade, but it is equally necessary, on the other, to safeguard the public, and evidence has been given to show that stricter enactments are needed with reference to the sale of poisons, such as the requirement that they should only be supplied in sealed vessels, and that mechanical appliances should be used for the prevention of accident. This is all beautifully vague, but it is probably as safe a forecast as anyone could make in the circumstances.

The Free Distribution of Disinfectants is engaging the attention of public bodies, some of which disapprove, whilst others approve, of the practice. At Preston the Borough Council has decided to limit the free supply of disinfectants, with the result that a public meeting has been held, at which a resolution was passed to the effect that the stoppage of the free issue of disinfectants to all applicants is detrimental to the health of the town, and the local Health Committee was called upon to rescind the resolution prohibiting the free and unrestricted issue of the same. At Glossop, on the other hand, a case of suicide by carbolic acid given away by the local sanitary inspector has led a member of the Borough Council to protest against the indiscriminate distribution of poisonous substances as disinfectants. He said if it was customary to supply people free it was a mistake; a chemist would not have supplied the man at all, and he would like to ask if it was customary throughout the land to give carbolic acid to those applying for it for disinfecting purposes. The inspector said he was bound by the Local Government Board and the local authority to give out disinfectants when applied for in cases of infectious disease. In the case of the man referred to the carbolic acid was supplied to the occupants of a house for disinfecting purposes, verbal and printed instructions being given as usual, and it would not do to stop giving out disinfectants because someone had done wrong. The medical officer of health for the district also insisted that disinfection must be done, but he allowed that it was carried out in a very illogical manner. No reference was made to the fact that carbolic acid is not a disinfectant.

The Pharmaceutical Society of Ireland has raised a new point under the Irish Pharmacy Act (see p. 545), by bringing an action against the representatives of the administrator of a deceased pharmaceutical chemist, for keeping open shop for compounding medical prescriptions without being legally qualified to do so. Under Section 32 of the Act the representatives of a deceased pharmaceutical chemist, who was in business at his death, and registered at that time, is entitled to carry on such business so long as it is conducted *bonâ-fide* by a duly qualified assistant who is registered as a pharmaceutical chemist under the Act. The Society admitted that the business in question had been carried on by a duly qualified chemist, but contended that it was never intended that the business should be so carried on indefinitely, only that the immediate representative of the deceased pharmaceutical chemist might carry it on *bonâ-fide*, so as to give an opportunity of disposing of it. The case for the prosecution was that it was only the immediate representative of the deceased chemist who should carry on the business, as provided by Section 32, but in this case administration had been taken out by deceased's mother, who had since died, and administration *de bonus non* was then taken out by her sister, who was now carrying on the business, as the Society contended, illegally. For the defence it was urged that the term "administrator" should not be limited to the first administrator only, and that the presence of a duly-qualified person in charge of the business sufficed for the safety of the public, which was the object aimed at by the Legislature in passing the Act. It was also pointed out that the policy of the Act was not in every case to prevent everyone or every body of persons from carrying on the business, unless they held the necessary certificate, because the House of Lords had decided that a corporation was not a person within the meaning of the Statute, and could carry on the business of a pharmacist so long as there was a properly qualified person on the premises. The whole matter was shown to turn on a point of law and, ultimately, the magistrate decided to reserve judgment.

The Cause of Cancer has yet to be discovered, but, according to a *Times* report of a recent lecture by Mr. Jonathan Hutchinson, that eminent surgeon is of opinion that arsenic is the chief factor in causing the fell disease. The lecturer had referred to the increase of arsenic in medical prescriptions, and remarked that at the present time the drug was used three times as much as it was thirty years ago. Used with discretion he thought arsenic might be beneficial, but an undue use of the poison caused cancer in some cases, and in others greatly aggravated it. Mr. Hutchison also strongly condemned wall papers of a green colour, because they frequently contain arsenic, and cancer may thus ensue. But the more sweeping statement with which he was credited by the *Times* has been promptly disclaimed, Mr. Hutchinson having since written to say that he neither stated nor believes that arsenic is the chief factor in causing cancer. He did say it had been proved that the long-continued use of arsenic might cause cancer, and that therefore we may feel sure that it has to some extent contributed to the increase of cancer which has occurred during the last century. As to how great its influence may have been, he thinks we can for the present only conjecture, but probably it has been but small. In conclusion, Mr. Hutchinson says he referred the increase of cancer chiefly to the increased longevity of the race, which has brought about the result that a larger number of persons now live to attain the age most liable to cancer than was formerly the case, but he mentioned also several other contributory causes.

The Romance of Medicine provided Sir Frederick Treves with a fascinating topic when he distributed the prizes to the successful students at Charing Cross Hospital Medical School last week, and subsequently delivered an address to the assembled audience. He said there has been no time in the history of medicine when the art of healing had reached the stage which it has reached at the present time, and, almost for the first time in the history of this country, the medical man has become an actual factor in the State. Moreover, the profession of medicine is distinctly a profession of romance. No sort of fantastic story that has been pinned on to the travels of the past can exceed such discoveries as those of Pasteur, Lister, Koch, and many others, in the quality of romance. If medical men have discovered no new Hesperides, they have certainly travelled very far into the mysterious valley of the shadow of death; and although there might be no man then present like a new Columbus to discover a new continent of America, there might be one who would discover—for there must be such a man soon forthcoming—a cure for cancer. The parallel is very close between the destruction of the dragon by St. George, and the discoveries in connection with tuberculosis. There was a disease devastating this country and others, and laying low the very primest lives within it. But the determined destruction of that disease has come, and the manner in which it has been followed out is romantic to a degree.

There is no Detective Story that has ever been written, which can, in Sir Frederick Treves' opinion, surpass the story of the mysteries of malaria and the manner in which it has been tracked down and finally revealed. Though a surgeon in an ill-fitting apron that does not suit him, standing alone in a silent operating theatre, may appear as little romantic as a girder in a modern railway station, there may be times when that man is as much a matter of interest as the old hero of romance who stood with his back to a wall, and with his rapier in his hand, facing great odds. There are times when a life depends upon the movement of a surgeon's hand, and there is a depth of romance in some applications of that branch of the profession which can hardly be exceeded by what are called the romantic stories of the present time. It is a romantic profession throughout its two extremes, with a little village doctor at one end of the scale and the army surgeon who has earned the Victoria Cross on the battlefield at the other extreme. In war it is difficult to say where the romance was to be found. It may be in the trenches, but a great deal of it lies behind the trenches. In watching the advance of the army to what was afterwards the field of the battle of Colenso, Sir Frederick thought the greatest interest attached to the four wagons of the bearer companies, with the red cross fluttering above them, which were to go on to the field the next day to remove the wounded. Of all circumstances connected with a battlefield such as that of Colenso, he thought, when the story was told, the most romantic would be found in the hospital in which all the wounded of that battlefield were collected.

POISONING CASES.

Nineteen deaths by poison have been reported since June 11—eight accidental cases and eleven suicides, thus:—

Poison.	Accident.	Suicide.
Alcohol	1	—
Carbolic Acid	—	3
Caustic Alkali	2	—
Hydrochloric Acid	—	1
Laudanum	1	2
Mercuric Chloride	—	2
Narcotic Poison	—	1
Oxalic Acid	1	1
Ptomaines	1	—
Sleeping Draught	1	—
Vitriol	1	—
Other Poison	—	1

Alcohol, taken in excess, caused the death of a young woman at Worksop.

Carbolic Acid was taken by a farm bailiff at Prestbury, a draper at Cheetham, Manchester, and the wife of a Manchester dairyman.

Caustic Alkali contained in a boiler composition was taken by an iron driller at Bolton, in mistake for hop ale, and a workman at the United Alkali Company's works at Widnes fell into a vat containing caustic.

Hydrochloric Acid was taken with suicidal intent by a woman at Portsmouth.

Laudanum caused the death of a girl of seventeen, who was found unconscious in a caravan at Undercliffe; also of a London man who was found dead in a Glasgow hotel, and of a young child at Markham, Easton-in-Gordano. At the inquest, held at Pill (Somerset), the mother stated that the child was suffering from a cough, and to relieve the same she gave it a dose of medicine which had been given her by a neighbour under the impression that the bottle contained Friar's balsam. The child became drowsy, and the mother thought it advisable to call a doctor in. It was then discovered that the child had been given some laudanum, instead of Friar's balsam, and all efforts to bring the child round were unsuccessful.

Mercuric Chloride, obtained for photographic purposes, was taken by a clerk at Rickmansworth; also by a man at South Reddish (Lancs).

Narcotic Poison of some kind was taken by a Colchester photographer.

Oxalic Acid caused the death of a young woman at Melton Mowbray, who had apparently taken the poison in mistake for Epsom salts. The same poison was purposely taken by a young woman at Heanton Punchardon, North Devon.

Ptomaines were said to be the cause of death in the case of a boy of four, at Batley, who had eaten some unsound gooseberries and chewing gum.

Sleeping Draught, containing morphine and chloral, was taken in excessive quantity by a Margate man (see p. 545).

Vitriol caused the death of a workman at the Hawarden Bridge Works, near Queensferry. He had been engaged in a scuffle with a fellow workman, and fell into a tank containing the acid.

Other Poison.—A waiter living in Drury Lane, London, committed suicide by taking some poison unnamed.

Non-Fatal Cases.—The poisons used in case of attempted suicide during the past week were ammonia, carbolic acid, eye lotion, hydrochloric acid, laudanum (three cases), liniment, mercuric chloride, phosphorus, rat poison, sheep wash.

LEGAL INTELLIGENCE.

Pharmacy Act, 1868.

Illegal Sale of Nicotine.

At the Leeds West Riding Police Court, on June 17, Mr. C. E. West, manufacturer of horticultural sundries, Roundhay, was summoned, at the instance of the Pharmaceutical Society, for not having entered the sale of poison, for having sold poison in a bottle insufficiently labelled, and for having sold poison to a person unknown to him.

Mr. Peckover, who prosecuted on behalf of the Society, said that the proceedings were taken under Section 17 of the Pharmacy Act, and that as the defendant had practically admitted the offences he would prove the case very shortly.

Mr. Arthur Foulds, an agent of the Society, called at the defendant's premises on April 23, and, it was stated, asked for a preparation known as extract of nicotine. He was supplied with it in two bottles, which did not bear the name and address of the seller. Mr. Foulds, who was unknown to the defendant, was not asked for his name, neither did the defendant make any entry of the purchase, as required by law.

The Defendant said he had no knowledge of having sold the extract of nicotine to Mr. Foulds, but if he did it was quite unintentional. He stated that he was the patentee of the fumigator, and that he only sold the nicotine in connection with it to his customers.

The defendant was fined 20s. and costs in each case.

Illegal Sale of Nicotine.

At the Kingston County Bench, on June 12, before Mr. J. Innes, in the chair, and other magistrates, Joseph Hutchinson, corn, seed, and artificial manure merchant, of Cobham, Surrey, appeared to answer three summonses issued at the instance of the Pharmaceutical Society—(1) That he, on May 5, sold to George Henry Steer a certain poison, to wit, a poisonous vegetable alkaloid called nicotine, being a poison within the meaning of Schedule A, Part I., of the Pharmacy Act, 1868, which poison when sold was contained in a bottle, and which bottle was not distinctly labelled with the name and address of the seller; (2) that he failed to make an entry of the sale in a book to be kept for the purpose, giving the date of sale, the name and quantity of the article sold, and the purpose for which the purchaser stated it was required, and to which entry the signature of the purchaser was not affixed; (3) for selling the article to a person unknown to him.

Mr. R. E. Vaughan Williams appeared to prosecute, and Mr. Thomas G. Dobbs, secretary and solicitor to the Traders in Poisons, etc., Protection Society, was for the defence.

It was agreed to take the three summonses together.

In opening the case, Mr. Vaughan Williams observed that the proceedings against the defendant were taken at the instance of the Pharmaceutical Society, which was a society charged by the law with setting in motion proceedings under the Pharmacy Act, Section 15. The Society was also at liberty, if it thought proper, to set in motion the law under Section 17 of the Act. The case before the Bench arose from the sale of a certain bottle of nicotine, and he would show that the quantity sold was sufficient to kill hundreds of people if it got into their food or anything of that sort. The facts were briefly as follow: Mr. Hutchinson carried on business as a corn, seed, and manure merchant at Leatherhead and Cobham. On May 5 dant's shop at Cobham, and bought a bottle of "XL-All Vaporising Fumigator," which was used by gardeners. The transaction was carried out by defendant's brother, Thomas

Hutchinson, to whom the purchaser of the compound, Mr. Steer, was quite unknown. Moreover, when the transaction was carried out the proper formalities were not complied with, every single provision of the Act being disregarded.

George Henry Steer, of Brixton, was the first witness called. He stated that, acting under instructions from the Pharmaceutical Society, he, on May 5, went to defendant's shop at Cobham, and bought a bottle of "XL-All Vaporising Fumigator," for which he paid 2s. 10d. He was given the receipt produced, which was signed "Thomas Hutchinson," who, witness explained, was defendant's brother. He was also given at the same time a printed catalogue, which contained, among other advertisements, an announcement that defendant sold that particular compound. The bottle had a metal capsule upon it, and witness allowed it to remain until he handed it over to the authorities of the Pharmaceutical Society. In answer to Mr. Dobbs, witness said that he was a messenger employed by the Society, and was not a spy. When he purchased the compound he did not say what he wanted it for. He was not asked. He was not told by the Pharmaceutical Society to explain the purpose for which he wanted the compound.

Mr. Harry Moon, a clerk to the Registrar of the Pharmaceutical Society, said that he instructed the last witness to make the purchase, and subsequently witness handed the bottle over to an analyst.

By Mr. Dobbs: The label on the bottle read: "This compound is labelled 'Poison' in conformity with the Pharmacy Act"; and further: "Tobacco is generally considered to have somewhat poisonous properties, and the juice of tobacco which collects in the stem of a pipe is well known to be poisonous. This compound contains the concentrated nicotine of tobacco, and should be kept in a safe place and out of the reach of children."

Mr. Thomas Tickle, an analyst, deposed that he received the bottle from the last witness, and made an examination of its contents. He found the compound contained nicotine in proportion not less than 20 per cent. Nicotine was a vegetable alkaloid, and a potent poison. The bottle contained 2 ozs. of fluid, in which there was at least 188 grains of nicotine. That was a decidedly poisonous quantity. One grain alone would be fatal to two or three persons.

By Mr. Dobbs: Witness was aware that arsenic had been known to be used in the manufacture of paint, but it was not frequently used now. He had examined wall-paper, and detected the presence of arsenic, but he did not think it was ever used for that purpose now. Such evil results had attended its use that manufacturers had discontinued it.

The witness Steer, recalled, stated that he did not sign any book or paper on receiving his purchase, nor did he see any entry made.

Mr. Dobbs, addressing the Bench, remarked that he did not propose to contest the facts of the case, but he contested the case itself on the ground that the compound was not a poison that came under the Pharmacy Act of 1868. It was used solely for horticultural and trade purposes, and it was absolutely essential that such articles should be made in the form that they were at the present time. If the Pharmaceutical Society were going to adopt the means they had adopted that day, viz., go round to all seed merchants, etc., and prosecute them, they would put into the hands of chemists a monopoly which was never intended by the Act of 1868. Poor oil and colourmen would suffer, horticulturists would suffer, and the whole country would suffer in consequence. If the Bench held that the compound was a poison under the Act of 1868, they would be setting down a very stringent rule, and would prevent certain people selling a very necessary article. If this was nicotine in a pure and simple form it would have been a poison, but being a fumigator mixed with something else it was not a scheduled poison. Defendant sold a bottle containing nicotine, but it was not nicotine in its pure form. The whole Act contemplated a medicine, or something that needed to be compounded and mixed, and its object was to prevent persons putting poison into medicine in such a quantity that would cause death. No mention was made in the Act of nicotine when sold for horticultural purposes. He submitted that a poison other than those used for medicinal purposes must be in a pure and simple form to bring it within the meaning of the Act. No harm had been done by the sale of the poison in question. It was sold in a sealed bottle. If the magistrates held that it came within the meaning of the Act he trusted they would find that defendant acted in ignorance, and inflict merely a cautionary fine.

The Chairman, without comment, observed that the Bench had decided to inflict a fine of £2 in each case, the amounts to include costs.

Mr. Dobbs asked the magistrates if they would state a case for appeal, and was informed they would do so if an application was received in proper form.

Pharmacy Act (Ireland), 1875.

Compounding of Medical Prescriptions.

On Friday, June 13, in the Southern Police Court, Dublin, before Mr. Swifte, Mrs. Josephine Preston and Mrs. Margaret Peyton were summoned by the Pharmaceutical Society of Ireland for having, on the 11th of last February, at 164, Great Brunswick Street, Dublin, kept open shop for compounding medical prescriptions, and compounded a prescription for F. W. Leslie without being legally qualified to do so.

Mr. R. K. Clay, solicitor, appeared for the Society; Mr. Ignatius O'Brien, K.C., instructed by Messrs. J. L. Scallan, appeared for the defendants.

The Vice-President of the Society, Mr. Bernard, and the Registrar, Mr. Ferrall, were present.

The case involved a novel question of law which the Society, it was stated, wished to have decided. The business in question was formerly carried on by Mr. Bowers, a registered pharmaceutical chemist, who died on June 29, 1895, intestate. A grant of administration was made to his mother, Mrs. Bowers, in September, 1895. She died on January 22, 1902. On April 1, 1902, a grant of administration *de bonis non* was made to the defendants, who are sisters of the deceased Mr. Bowers. In the first grant the assets were set down at £4,651 odd, and the amount unadministered at the time of the second grant was £2,098. In the course of the hearing it was admitted that there was a duly qualified assistant on the defendant's premises, and the fact of compounding was also admitted. The only question was whether the defendants, under their grant of administration, were entitled to carry on the business.

Mr. Clay contended that Section 32 of the Pharmacy Act (Ireland) of 1875, which, on the death of a pharmaceutical chemist, allows the business to be continued by his executor, administrator, or trustee, so long as it is conducted by a duly qualified assistant, did not mean that it might be so carried on indefinitely by a series of representatives. What was intended by the section was that the immediate representative of the deceased should have an opportunity of carrying on the business until it should be disposed of.

Mr. O'Brien, K.C., contended that his clients were entitled under the word "executors" in the Section to carry on the business. The great object of the legislation was to protect the public, and the safety of the public was secured so long as there was a qualified pharmacist on the premises.

Mr. Swifte reserved his decision.

Sale of Food and Drugs Acts.

TINCTURE OF IODINE.

At Lambeth Police Court on Thursday, June 12, Parkes' Drug Stores, Limited, of High Street, Camden Town, and elsewhere, were summoned by the Camberwell Borough Council for selling at their branch establishment at Rye Lane, Peckham, tincture of iodine deficient in iodine to the extent of 44 per cent.

Mr. G. W. Marsden, solicitor to the Council, appeared in support of the summons. Mr. Marsden said the Borough Council thought it very important that drugs should be kept up to the proper standard.

For the defence it was stated that defendants took every precaution, and kept a fully-qualified manager at each of their shops. It was also pointed out that the value of the iodine which was missing was so small that there could be no suggestion of fraud. No one could be more careful than the defendants were.

Mr. Horace Smith: You do not deny the fact that this was below the proper strength according to the Pharmacopœia?

Defendants' Representative: It is below; but it must be through carelessness.

Mr. Horace Smith: But that, you see, is no defence in point of law. You must not sell it below the proper strength.

The defendants were ordered to pay a fine of £3 and £2 19s. 6d. costs.

Weights and Measures Act.

At Brentford Petty Sessions, on Thursday, June 12, before Mr. Montagu Sharpe and other magistrates, Messrs. Parke, Davis, and Co., manufacturing chemists, of Heston Mills, Hounslow, answered a summons charging them with having in their possession for purposes of trade certain unstamped weights and one fluid ounce measure. Mr. A. H. Bodkin, barrister, represented the defendants, while the prosecution was not legally supported.

Inspector Walter Tyler said this prosecution was taken under Section 29 of the Weights and Measures Act, 1878, while Section 54 of the Medical Act also applied. The Medical Act enacted that all chemists and druggists should be guided by the British Pharmacopœia, and in that work it was specifically laid down that Imperial weights and measures were to be used as the standard for the compounding of drugs. The only case the Inspector had been able to find on a similar point was that of Crick *v.* Theobalds, where the defendant was a lead-smelter. In that case the magistrates decided in favour of the defendant, but the decision was upset in the High Court on the ground that the weights were used for trade, and not in weighing merely for the satisfaction of the defendant, as was contended. There was a further offence in the present case, inasmuch as the wages of the employees were reckoned by the weights in question, all the girls employed in the pill-making branch of the business being paid *per quantum.*

The Inspector then went into the witness-box, and stated that on May 12 he visited the defendants' premises, and there saw a Mr. Parker, the manager or secretary, with whom he made the inspection. In the first room examined witness found a scale under a glass case. On this scale were one 50 grains weight, one 30, one 20, and one 10. All of these were unstamped, as also were three others found in the pill-room, and the fluid ounce measure. He saw other weights which were stamped. The manager, Mr. Parker, afforded him every facility to view the premises, and explained the use to which the weights produced were put. He said that they were merely for weighing the pills produced by a workgirl for a known weight of ingredients for the satisfaction of the firm; and, further, that these weights were kept quite separate from those used for weighing out the ingredients to be compounded, which were properly stamped.

Clara Rowe, employed in pill making at the defendant's factory, gave evidence bearing out the statement attributed to the manager.

Mr. Bodkin said it was a little awkward to see exactly what the issues of the case were, as several Acts of Parliament were involved. The defendants were in no way retailers, and were not connected with "Parke's Drug Stores," or any other retail business. They wanted it made quite clear that they had done nothing unjust or improper to their customers. One of the things they made in very large quantities was pills of various kinds made in accordance with certain exact formulæ, and mixed in proportions weighed and measured out by properly stamped weights and measures. The mass of material was drawn out into a small roll of uniform thickness. This was cut into sections by a machine, and rolled into pills or tabloids. There was a certain test applied to the volume of pills made to ascertain whether the mass had gone as far as it should go or not. This was a mere private test for the satisfaction of the partners of the firm, and consequently the weights used in that test had nothing to do with any "contract, bargain, sale, or dealing," which was the definition given in the Act of the word "trade." The case of Crick *v.* Theobalds, to which Mr. Tyler had alluded, differed from the present case in that the defendant had the results of his weighing entered on the invoices. On this ground the Divisional Court decided that the use of unstamped weights was an offence against the Act; but the point did not arise in this case. Counsel submitted that the Medicine Act did not apply at all to this case. Mr. Tyler had quoted that time-honoured institution the British Pharmacopœia, which as a time-honoured institution would no doubt survive for many years; but chemists and druggists, and especially manufacturing chemists, were not bound by that work at all.

Ernest Parker said he was chief chemist at the defendants' works. The pills were generally sold by number in bottles, and only occasionally by weight; on such occasions properly stamped weights and measures were used. The girl who made the mass-material into "pill piping" took a definite length of the pipe and weighed it to ascertain whether it was of uniform and correct diameter. Subsequently the quantity of pills made was weighed again, and then it was that the weights in question were used.

After deliberating in private, the Bench decided that the weights had been used for purposes of trade, and there must consequently be a conviction.

Mr. Sharpe (to the Inspector): I suppose you only ask for costs?

Mr. Tyler: We shall be quite satisfied with costs, your worship.

Mr. Bodkin, however, pressed for the infliction of a nominal fine, as if costs only were paid there might be difficulty in carrying the case further.

The Bench decided to impose the nominal fine of a shilling and costs.

Recovering a Fee for an Experiment.

The case of Cribb *v.* Spaull came before his Honour Judge Woodfall in the Westminster County Court on the 12th, and was a claim for 5 guineas for a chemical experiment and for further small sums in connection with it.

Plaintiff was Mr. C. H. Cribb, B.Sc., F.I.C., F.C.S., etc., and the defendant was a finance agent who came to him with Mr. Bolton, a practical chemist, with an invention of the latter's for the manufacture of cyanide. Plaintiff was to make an experiment, did so, and was not paid. The experiment was a failure, as it only resulted in just a trace of cyanide.

The defence was that Mr. Spaull was helping to bring out the invention. Mr. Bolton had made successful experiments, and they looked for a suitable consulting chemist with a laboratory in a central position and suitable for a public demonstration. Plaintiff was analyst to the City of Westminster, and was selected. He was told that it was required to make about a half-pound, but he failed at the first experiment, and Mr. Bolton saw at once that his apparatus was not suitable. They went elsewhere, and had the process successfully demonstrated for £2. He made an offer to try the experiment again for nothing.

Plaintiff said his reason for that was that he wished to try and make a success of the idea, and it would not have been a great trouble as he had everything ready.

His Honour said he accepted that explanation. Plaintiff had not agreed to make it successful. He agreed to make an experiment, and that he had done, and he would have judgment with costs.

Inquest at Margate.

Prescriptions and the Pharmacy Act.

Mr. Toke H. Boys, Margate Borough Coroner, held an inquest, on Monday, June 16, relative to the death of Fredk. Wm. Fisher, aged 41, who died early on Sunday morning, after taking a large dose of a sleeping draught. It transpired that the deceased was of intemperate habits, and on June 20, 1900, Dr. Sutcliffe, whilst attending him for incipient delirium tremens, prescribed a sleeping draught for him, but as it was of so dangerous a nature, Dr. Sutcliffe administered the medicine himself, and after four doses had been taken he took the remainder away. The prescription remained in deceased's possession, and it was not again made up until April 22 last, when it was dispensed at the pharmacy of Mr. Evans, Northdown Road, Margate. On Sunday five doses were left, and the deceased, who was very near-sighted, drank the whole of it, and died an hour later.—Mr. Percival Sayers, who made up the prescription, stated that he was fully qualified. The medicine consisted of potassium bromide, with solution of morphine and chloral.—The Coroner asked whether the sale was entered in the poison book, and the witness gave a negative reply.

The Coroner: Do you know the Pharmacy Act? Witness: Yes.—Do you know the scheduled poisons in it? Yes.—Is it not a fact that if you make up a prescription of any ingredients that are scheduled in the Act it is your duty to enter it into the registered poisons book? In case of a medical man's prescription we fulfil our duty by copying the prescription.—That is sufficient? Yes?

Dr. Sutcliffe: He is quite right.

The Coroner: Is it necessary to put a red poison label on the bottle containing such a preparation? It is not the usual thing?—Is it necessary under the Act? No, it is not.—You are fully qualified, but notwithstanding the powerful nature of the medicine, it is not necessary to label it poison, is that your opinion? I speak from my experience. It is not usual to label any medicine poison.

The Coroner at this point referred to the Pharmacy Act of 1868, and said: It appears to me that it should have been labelled, according to my reading of the Act.

Dr. Sutcliffe stated that although two of the drugs in the prescription were included in the second schedule it was sufficient to enter it in the prescription book, as it answered the same point as the poison book. The fact that a patient could have a prescription made up at the chemist's without his medical attendant being consulted was the fault of the system, and he thought it would have been wise had the chemist in this case consulted him before making it up. The doctor added that one dose contained 30 grains, so that he took 150 grains; 60 or 90 grains would possibly cause death.

The jury returned a verdict of "Death by misadventure," and the Coroner, addressing Mr. Sayers, said: When you go home, if you have a copy of this Act, study it. It is an important Act passed over twenty years ago for the better safety of people. I think myself the bottle ought to have been labelled poison. —Mr. Sayers: It is not the usual custom, sir; I think I have fulfilled the Act in every way.—The Coroner: I do not think the jury attach any blame to you.—Dr. Sutcliffe interrupted by saying that he thought Mr. Sayers acted perfectly right in making up the prescription, and that he had fulfilled the requirements of the law.—The Coroner (to Mr. Sayers): I am not attaching any blame to you, study the Act yourself.—Mr. Sayers repeated that he had studied it, whereupon the Coroner observed: And you say you have no occasion to label it poison, and to enter it in the poison book? Yes.

LONDON CHEMISTS' ASSOCIATION.

The first annual general meeting of the above Association was held on June 18, at the Holborn Viaduct Hotel. About forty members were present. Mr. Albert Cooper presided.

Annual Report.

The Secretary, having read the notice calling the meeting, read the report presented to the annual meeting by the General Purposes Committee. This report, after recapitulating the circumstances which led to the formation of the Association, and dealing with the work of the Committee, pointed out that ninety-four members had been enrolled. This membership had been obtained without any special canvassing, but the Committee intended to organise a thorough canvass in the immediate future. The financial statement showed that the income was £24 0s. 10d., all of which had been spent with the exception of 5s.

Mr. C. J. G. Bunker (Great Dover Street, S.E.) asked, had not considerably more than ninety-four chemists promised to join?

Mr. R. H. Jones, the Secretary, replied that sixty-four had promised, who had not as yet paid their subscriptions.

Mr. Pond (Fleet Street, E.C.) thought the result obtained, so far, was very satisfactory, and that when the Association settled down considerably more would join.

Mr. Hick (St. John's Wood) thought a paid canvasser ought to be engaged, but Mr. R. Willson (New Kent Road, S.E.) argued that every member could call upon at least eight or nine men in his own district. He had tried this plan himself and had found it successful.

Mr. Pentney (Dalston, N.E.) admitted that each one could do something, but that the Association would never become successful unless it employed a paid canvasser.

Mr. Bunker informed the meeting that a South London Committee had been elected, and that bi-monthly meetings had been arranged to begin early in September. Mr. Watson Will had lent them rooms which were very central, and they hoped to have a series of very interesting meetings.

Mr. W. S. Glyn-Jones deprecated the idea of a paid canvasser. He thought that was too expensive a way of collecting a 5s. subscription, and he felt sure that the Association would arouse such interest that it would recommend itself to London chemists without a paid man calling upon them to induce them to join. He was not dissatisfied with the result of their work up to the present. They had now a nucleus of what he hoped would eventually grow into the largest local chemists' association in the kingdom.

Mr. Cooper, in putting the report to the meeting, said he was gratified at the discussion that had taken place. Questions were an indication that the meeting was taking a lively interest in the proceedings. Opinion, he thought, was against the paid canvasser, and he felt sure that if members in each district would call on their brother chemists, the question would be settled.

The report was unanimously adopted, and Messrs. W. R. Barnes and T. H. Powell were elected as Auditors to examine the accounts.

Election of Committee.

The next matter dealt with was the election of the General Purposes Committee. The President proposed that the old Committee be re-elected *en bloc.* An apparent discrepancy between Rules 5 and 6 was pointed out. Rule 5 stated that besides the general officers, the General Purposes Committee should consist of "twenty members elected annually," while Rule 6 read that "ten members shall retire annually." In future, it was decided that twenty members should be elected, but that the seats of the ten retiring members only should be ballotted for. As the General Purposes Committee had only been elected tentatively, they were re-elected, with the addition of Messrs. Watson Will and J. Edwards (Hornsey). The General Purposes Committee therefore consists of the following:—Messrs. Albert Cooper, Chairman; W. S. Glyn-Jones, Vice-Chairman; G. P. Pond, Treasurer; P. H. Burton, C. J. G. Bunker, F. E. Bustard, W. M. Campbell, H. Bracknell, J. Edwards, R. Feaver Clarke, W. Gulliver, W. A. Goodall, A. Pellew, W. J. I. Philp, J. C. Pentney, F. W. Truman, J. C. Umney, D. White, R. Willson, C. E. Pickering, Watson Will, and R. H. Jones, Hon. Secretary.

The Question of Title.

Mr. F. E. Bustard proposed the following resolution:—

> "That this Association urges upon the Council of the Pharmaceutical Society the advisability of bringing a test case before the Courts of Law at an early date for the purpose of deciding finally the right or otherwise of limited liability companies to use the title of 'Chemists.'"

Mr. Bustard said he spoke as an unknown unit in the pharmaceutical world, who, with others, turned from gazing at the flaring advertisements of unknown companies using the title of "chemists," and asked each other why the Society made no attempt to stop the injustice. The resolution, he pointed out, did not question the right of limited liability companies to keep open shop for the sale of poisons or to carry on the entire business of a chemist and druggist, but only questioned their right to use a title which implied registration under the Pharmacy Act, 1868. He did not think the legal right of companies to carry on the business of a chemist and druggist would ever be upset, because the 1868 Act was one passed really for the protection of the public, and, continued Mr. Bustard, "we cannot in fairness assert that the public safety is endangered by limited companies, with hundreds of shops, in each of which there is a qualified chemist conducting the actual sales of poisons, any more than it is in the branch shops of smaller proprietors." The companies at present were conducting their business under the shelter of the law, and if they gave better wages chemists ought not to be blamed for working for them, as he had done himself. Mr. Bustard next dealt with the statement in Lord Justice Bramwell's decision in the leading case on the position of companies under the Pharmacy Act, that the directors or managers kept "open shop." This put them in the position of a partnership, and Mr. Bustard cited a case showing that an unqualified partner had been successfully prosecuted by the Society. To restrict titles was not in restraint of trade, and they were justified in asking the Pharmaceutical Society to take a test case into court.

A lengthy discussion followed. Mr. Pond thought the resolution, while good in itself, would have no weight with the Society. It required another resolution to put it into force. It was like a tree without a root; they must get the root and the tree and place it in the mouth of the Pharmaceutical Society. Another member made a personal attack upon Mr. Bustard because he had been in the employ of Day's Stores. Mr. Burton referred to the Leith Depôt case, which the Society lost on appeal. The Society ought long ago to have gone to Parliament and pointed out that the Pharmacy Act was useless, and brought in a simple Act, placing a company in the same position, in relation to the Act, as an individual. Such a course would have met with the approval of the whole trade.

Mr. Campbell supported the resolution, and dealt with the question of selling poisons under an assumed trade name.

Mr. R. B. Betty (Regent's Park, N.W.) moved an amendment to the effect that the Society should introduce a new Pharmacy Bill before a test case was taken. In the discussion on this amendment, Mr. Willson suggested that the question was not one which affected London chemists alone, and that other local associations should be consulted. The Society was spending money in research work which might be much better spent in other directions.

Mr. Pentney thought the amendment was too big an order and rather indefinite, and

Mr. Hick suggested that the Council of the Pharmaceutical Society were the better judges of the right time to take action. If they had not done so they had probably very good reason for their action.

Mr. Glyn-Jones was very emphatic that the whole subject was not one suitable for discussion at an opening meeting which was to be reported in the Press. They might rest assured that the Pharmaceutical Society had not been asleep. The Council was anxious to bring about by legislation anything that could be done. The question had received careful deliberation in the past, but he was not prepared, for obvious reasons, to give the result of this consideration, and he suggested that the Committee of that Association might interview the Pharmaceutical Council privately on this matter.

Mr. Bunker said the subject had been too much *in camera* in the past, and that, in his opinion, it was a proper subject for a meeting of chemists to discuss.

Mr. Burton said the view the trade took was that for twenty-two years this difficulty had been going on, and nothing had been done.

Mr. Glyn-Jones said he quite approved of the subject being discussed, but that it was one of too much delicacy to be discussed in a public meeting.

Mr. Truman could not see where the delicacy came in—it was a question of fact; and Mr. Pentney said he was sorry to see that Mr. Glyn-Jones appeared to have changed his views.

On the amendment being put it was lost, and the original resolution unanimously carried.

Mr. Pond then suggested a resolution to the effect that a deputation from the Association should wait upon the Council of the Pharmaceutical Society with a written requisition to convene a special general meeting to consider the matter of taking a test case to the courts. Mr. Pond eventually withdrew this resolution in favour of one that a deputation should first meet the Pharmaceutical Council in order to get the information the Council had on this subject.

The meeting then terminated.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.

A business meeting of this Association was held on Tuesday, June 17, in the lecture theatre, 17, Bloomsbury Square, London, Mr. W. H. Lenton in the chair.

After the minutes of the preceding meeting had been read and confirmed, the Secretaries submitted for consideration their report of the proceedings of the Association during the

Session 1901-2.

The Treasurer's accounts for the same period were also presented to be audited. These accounts, which showed a balance in hand of £2 15s. 10d. on the working of the session, were audited and found correct by Messrs. R. R. Bennett and E. T. Neathercoat.

Discussion was then invited upon both the report and balance-sheet, but as none was forthcoming, the Chairman moved, and the meeting unanimously resolved, that the Secretaries' report and the Treasurer's accounts for the session 1901-2 be, and hereby are, adopted.

Mr. Harry Martin, in felicitous terms, then proposed that a hearty vote of thanks be awarded to the Hon. Secs., Mr. Bernard Collitt and Mr. Frank G. Hines, for the excellent work which they had performed during the past session, and which had resulted so successfully, from both a social and financial point of view. This motion was seconded by Mr. E. T. Neathercoat and carried unanimously, with applause.

The vote of thanks having been responded to by the Hon. Secs., the meeting closed.

PHARMACEUTICAL SOCIETY OF CAPE COLONY.

The first annual chemists' dinner was held under the auspices of the Pharmaceutical Society of Cape Colony in the York room of the Theatre Restaurant, Cape Town, on May 21. Mr. F. W. C. Thomas, of Claremont, occupied the chair, with Mr. A. J. Rivett (Messrs. Lennon, Limited) as Vice-Chairman. There were about fifty-five members of the Society and their friends present. An excellent dinner, well served under the supervision of Mr. Hartley Tillotson, having been done justice to, the usual loyal toasts were proposed by the Chairman and enthusiastically received.

The toast of the evening, that of the

Pharmaceutical Society of Cape Colony,

was in the able hands of Mr. A. J. Rivett, Vice-Chairman, who, in the course of his remarks, referred to the good work done by the Society, both in the increase of its members and the financial position. At the same time he impressed upon those present the importance of more individual interest being taken, especially by the younger members, and expressed the hope that meetings such as this would tend towards cementing the good feeling which should exist for the mutual benefit of all.

Mr. J. S. North responded suitably with a few remarks, endorsing what the previous speaker had said.

The next toast was

The Press,

proposed by Mr. S. Johnson (Messrs. Lennon, Limited), who referred to the freedom enjoyed by the British nation, more especially through the Press, which was second to none in the world for freedom of speech, open to all.

Mr. H. Magness Elgar having responded suitably,

Mr. R. Sainsbury next proposed the toast of

The Visitors

in a jovial speech, which was responded to by Mr. Morgan.

A selection of vocal and instrumental music was next gone through, interspersed with a couple of humorous sketches by Mr. Sainsbury. Mr. Henry Evans, of Messrs. P. J. Petersen and Co., ably accompanied at the piano the various items.

Owing to the requirements of martial law, the programme had to be considerably curtailed, and after "The Health of the Chairman" had been ably proposed by Mr. J. A. Mathew, and drunk by all present to the singing of "For he's a jolly good fellow." Mr. F. W. C. Thomas modestly replied, and an enjoyable and highly successful evening was then brought to a close with the singing of the National Anthem.

The success of the dinner was largely due to the energy and interest displayed by the following gentlemen:—Messrs. J. Dell, Secretary to the Society, Fred Nisbet (of Messrs. P J. Petersen and Co.), and Mr. C. W. Brydges (Messrs. Lennon, Limited).

ROYAL INSTITUTION.

At a meeting held on Friday, June 13, the Duke of Northumberland was in the chair, and Mr. Marconi delivered a discourse, taking for his subject,

The Progress of Electric Space Telegraphy.

After pointing out that the practical development of electric space telegraphy was at the present time attracting more world-wide attention than any other branch of modern electric engineering, Mr. Marconi said that it was wonderful that man should be able to actuate an instrument and compel it to act at will over hundreds and possibly thousands of miles, but he considered it not more so than sending messages along wires as in the ordinary telegraph. It was comparable with sound waves, and the light and heat from the sun, which travelled through millions of miles of space. The principle on which wireless telegraphy was founded was the same: it consisted in transmitting and detecting ether waves of low frequency, known as Hertzian waves. He then went on to describe his system as first used six years ago, pointing out the various modifications of the coherer which he had used. It would be impossible without some system of tuning to make the system of any practical use, as otherwise the mixing of messages would have resulted. This tuning had been effected, and a number of transmitting and receiving stations could be erected side by side and yet experience no interference. It must be pointed out that a very powerful transmitter acting near a receiving station might prevent messages being received. This was not confined to space telegraphy alone, as it had been shown that ordinary telegraph and telephone messages could be intercepted. A short time ago, at Cape Town, it was found impossible to work the cable at certain times during the day when the electric trams were running. The latest forms of the electric detector were then described. This was known as the coherer, sometimes called the electric eye. It consisted of a glass tube about four centimetres long, into which were inserted two pieces of iron, the space between being filled with very fine filings of silver and nickel. With this instrument and its modifications an effective tapper was essential, but recently self-decohering coherers had been tried. One known as the Italian Navy coherer consisted of a glass tube with blocks of carbon or iron, having a globule of mercury between. These were not reliable for commercial work and were useful only for temporary tests, when syntonic effects were not required. The lecturer then described his new magnetic detector, which was used in place of the coherer. By means of this instrument it might be possible to read up to as many as 100 words per minute; at present they could receive at the rate of thirty per minute. These detectors will be better than the coherers, and will probably displace them altogether. Mr. Marconi said that the system was making rapid strides. Lloyds had adopted it on their stations at home and abroad. Seventeen liners have permanent installations, and no less than forty vessels of His Majesty's Navy are using it. Photographs of ships with and without the installation were thrown on the screen to show the slight difference in the appearance. It was pointed out that the same absolute quiet from the external world could not be obtained on ships carrying installations. The "Campania" and "Lucania" had taken as much as £60 for wireless messages on some trips. With regard to transatlantic communication, he was confident that with a sufficiently powerful transmitter messages could be sent as easily as over shorter distances. The Newfoundland experiments had been discontinued owing to the monopoly claimed by the cable company. The Canadian Government had invited him to experiment there, and in addition had given a subsidy of £16,000 towards erecting a station. Experiments had been tried recently by sending messages from the station in Cornwall to a ship sailing across the Atlantic. Readable messages had been received at a distance of about 1,500 miles and indications up to over 2,000. In connection with those trials an interesting fact had been brought to light. It was found that during the daytime messages could only be received up to 700 miles, whilst at night they were readable at over twice that distance. He thought, however, that this difficulty would be overcome by the use of sufficient energy, and that it would not therefore be one of the works of darkness. Mr. Marconi concluded by saying that whilst space telegraphy was of great commercial importance, it had another importance for England, in that it would be another link connecting her to her colonies and the United States.

PUBLIC DISPENSERS' ASSOCIATION.

At a well-attended meeting held on Wednesday, June 11, at St. Bride's Institute, on a special motion, Mr. H. T. Samuel, M.P.S., moved:—

> "That Article 4 of the Association's Constitution be amended from 'All dispensers in public institutions are eligible for membership' to 'After this date no dispensers in public institutions are eligible for membership unless they hold the qualifying certificate of the Pharmaceutical Society.'"

This was seconded by Mr. S. Boyd Donnan, M.P.S.

An amendment was moved by Mr. Turner, seconded by Mr. Bisley, that the words "or the Assistants' Certificate of the Apothecaries' Hall" be added.

A further amendment, moved by Mr. Lindsay, M.P.S., seconded by Mr. Hewitt, "That this discussion be postponed until the next meeting in October."

A full and lengthy discussion followed, in which Messrs. Jones, Welford, Duff, Spencer, Smith, Rutter, Samuel, and others joined.

Mr. Cairns, M.P.S., moved, seconded by Mr. O'Brien, M.P.S., that the question be now put.

The amendments were taken, and voting as follows:—For Mr. Turner's, 4 to 19 against; Mr. Lindsay's, 4 to 16 against; for the original motion, 23 for 5 against. Several provincial members voted by post.

The motion was declared carried.

OBITUARY.

Dixon.—On June 14, William Dixon, Chemist and Druggist, Cottingham, near Hull. Aged 67.

English.—On June 10, Robert Coulson English, Chemist and Druggist, Pickering. Aged 25. Mr. English, who was much respected in the town, had only a short time ago taken over the management of the business, which had been in the hands of the family for many years. Consumption was the cause of death.

Harris.—On June 13, Evan William Harris, Chemist and Druggist, Merthyr Tydvil. Aged 54. Mr. Harris, who had been connected with the Pharmaceutical Society for many years, and was Divisional Secretary for Merthyr Tydvil, was a native of Carmarthen. He purchased a business in High Street, Merthyr, twenty-six years ago, and was held in the highest esteem for his amiable and business-like qualities. He was a member of the Merthyr Chamber of Trade and a deacon of Market Square Congregational Church. One of his daughters, Miss Annie Mary Harris, in 1900 qualified as a chemist and druggist.

Kay.—On June 5, Charles William Kay, Chemist and Druggist, Roundhay Road, Leeds. Aged 35. Mr. Kay had been a member of the Pharmaceutical Society since 1899.

MacCreath.—On May 8, David MacCreath, Chemist and Druggist, Kwala Sumpor, Straits Settlements. Mr. MacCreath, who was formerly with Messrs. Squire and Sons, of Oxford Street, W., was the son of Mr. John MacCreath, chemist and druggist, of 3, Hinckley Road, Leicester.

Orledge.—On June 10, Robert Orledge, Chemist and Druggist, Frome. Aged 75. Mr. Orledge had carried on the business of a chemist at St. Catherine Hill for many years. He was a member of the committee of management of the Victoria Hospital, Frome, to the building fund of which he was a generous donor, but apart from that office he never took any active part in local public affairs.

Storie.—On June 15, Robert Storie, Chemist and Druggist, Dalkeith. Aged 49. Mr. Storie, who had been connected with the Pharmaceutical Society since 1874, had acted as Divisional Secretary for the Dalkeith district of Midlothian since 1893, and his death occurred quite unexpectedly. After evening service in St. John's U.F. Church, where he was an elder, he called on some friends at Hardengreen and left to walk home to Dalkeith. Some workmen discovered his dead body on the roadway early on Monday morning, and medical evidence showed that death was due to syncope. Mr. Storie was a native of Dirleton, and after serving an apprenticeship with Duncan, Flockhart, and Company, in Edinburgh, became a partner twenty-five years ago in the firm of Welsh and Storie, High Street, Dalkeith. He retired from business a few years ago, but continued to take a very active part in many kinds of public work. He was a member of both the Town and Parish Councils of Dalkeith. He was President of the Dalkeith Scientific Association, and lately, in connection with Mr. Carnegie's offer of £4,000 for the erection of a library building, Mr. Storie promised a handsome donation towards the purchase of books. He took a keen interest in politics, and was Vice-President of Dalkeith Conservative Association. Though he had recently been ailing slightly, he was able to play golf on Saturday, and his death was unexpectedly sudden.

Pharmacy and the Allied Sciences

A REVIEW OF CURRENT WORK.

SODIUM NITRATE AND PEPPERMINT. In continuance of their investigation on the influence of certain manures on the development of essential oil in peppermint, E. Charabot and A. Hébert publish the results of observations of the effects of sodium nitrate on the secretion of the oil. They find that, like sodium chloride (*P.J.*, *ante*, p. 489), the application of a 1 : 40 solution of $NaNO_3$ once, early in the season, causes a marked increase in the amount of esters in the peppermint oil obtained from the crop, a lessening of the quantity of water in the herb, and a corresponding increase in the amount of organic matter. While the proportion of esters in the oil is increased by this treatment, the relative quantity of menthol and of menthone is diminished.—*Comptes rend.*, **134**, 1,228.

RESIN OF DAMMARA ORIENTALIS. A. Tschirch and M. Koch find that soft spirit soluble Manila copal has the following constituents: 79 per cent. of the resin was soluble in soda solution; of this mancopalinic acid, $C_8H_{12}O_2$, and mancopalenic acid, $C_8H_{14}O_2$, were soluble in ammonium carbonate solution; these two acids comprised 4 per cent. of the resin. After their removal, the remaining 75 per cent. was found to be composed of the sodium carbonate soluble α- and β-mancopalolic acids, $C_{10}H_{18}O_2$. The portion insoluble in soda, amounting to 20 per cent., consisted of resene, $C_{20}H_{32}O$, 12 per cent.; volatile oil, 6 per cent., and water. Mancopalinic acid is crystalline, forming fine needles which melt at 175° C. The volatile oil had the sp.gr. 0·840 at 15° C., and boiled between 165-170° C. Hard Manila copal was found to differ somewhat in constituents, containing no crystalline acid, the free acid soluble in soda and sodium carbonate comprising 80 per cent. of the resin, consisted solely of α- and β-mancopalolic acids, with no mancopalinic or mancopalenic acid. Five per cent. of essential oil and 12 per cent. of resene were present in the portion insoluble in alkali.—*Archiv.*, **240**, 202.

LIGHT AND JEWELS. Certain diamonds, especially those which are extremely brilliant by artificial light, are found by Chamet to show a beautiful violet fluorescence when exposed to violet rays. The diamonds which show the most fire are not always those of the most regular form, but are invariably those which exhibit the most marked bright blue fluorescence with violet light. The use of this coloured light is, therefore, a valuable test for brilliants, ordinary stones showing a mere violet coloration and no fluorescence when exposed to its influence. A yellow diamond behaved in a peculiar manner when exposed to violet rays. It gave no fluorescence, but showed a deep red fire; after several minutes it was observed to have lost its yellow tint, and to have acquired a deep brown colour, losing thereby four-fifths of its commercial value. In twenty hours, however, it had regained its normal yellow tint, which rendered it valuable. Violet rays are also of great value in testing rubies, since, by its means, Burmese stones, which have a much greater monetary value than those of Siam, are readily differentiated, although even experts cannot readily distinguish them by their general physical characters. The author finds that Burmese rubies invariably exhibit a marked fluorescence with violet rays, while Siamese stones are but little affected by that light.—*Comptes rend.*, **134**, 1,139.

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CLASSIFICATION OF THE NEW ELEMENTS. H. Wilde claims that the figures obtained by Ramsay and Travers for the density of the new atmospheric gases show, with the exception of neon, that they belong to the series $HX7_n$. These densities are neon, 9·96; argon, 19·96; krypton, 40·78; xenon, 64. Of these the author considers that the high figure of neon is probably due to impurity, and that when pure its density will probably be found to be 7. Starting with this he thus arranges the atomic weights of nitrogen and new elements, Ne, 7; N, 14; Ar, 21; Kr, 42; Xe, 63.—*Comptes rend.*, **134**, 770.

NEW SOURCE OF OXYGEN. George F. Jaubert has introduced compressed blocks of sodium peroxide, or of the peroxide of potassium-sodium alloy, which previous to compression is mixed with the theoretical quantity of a permanganate or hypochlorite, or a trace of a salt of nickel or copper, in order to decompose the hydrate of sodium peroxide, which is stable in the cold. By this means a material is obtained, which, on merely coming in contact with cold water, evolves large volumes of chemically pure oxygen. It is claimed that by this means the transport of oxygen has become safer and more convenient, while its industrial application is facilitated by the ease with which the gas may be generated and stored.—*Comptes rend.*, **134**, 778.

ALCOHOL FORMATION DURING PLANT RESPIRATION. E. Godlewski made experiments, growing seeds in sterilised water freed from oxygen, and comes to the conclusion that under these circumstances practically equal quantities of carbon dioxide and alcohol are formed; he considers that the result may be shortly expressed $C_6H_{12}O_6 = 2CO_2 + 2C_2H_6O$. This would suggest that intramolecular respiration and alcoholic fermentation are closely allied. It was found that starchy seeds can be fed on sugar, while fatty seeds do not grow well in the absence of oxygen, and form but little carbon dioxide. Intramolecular respiration increases in amount during the first two or three days, when it reaches a maximum which is maintained for a week, or even for a fortnight, and then ceases altogether.—*Bulletin de l'Acad. d. sc. de Cracovie*, 1901, 227.

SESQUISODIC PHOSPHATE. From the fact that when orthophosphoric acid is titrated with alkali, helianthin turns from red to yellow when one equivalent of soda has been added, litmus changes with 1·5 equivalents, and phenophthalein with two equivalents, H. Joulie concluded that a sesquisodic phosphate, $Na_3H_3P_2O_8$, must exist, intermediate between the monosodic phosphate, as shown by helianthin, and the ordinary disodic phosphate. He found, in fact, that by adding sufficient orthophosphoric acid to crystals of that salt to render it neutral to litmus, a great lowering of temperature took place; on concentrating, crystals were obtained, consisting of oblique prisms which, after drying, responded to the formula $Na_3H_3P_2O_8$. This salt is stated to be much more suitable for therapeutic use than ordinary disodic phosphate, since it is more soluble, is active in smaller quantities, being tonic in doses of 15 grains, laxative with 75 grains, and purgative with 150 grains. Its taste is saline, neutral, and scarcely unpleasant. Although the author describes it as a new salt, J. B. Senderens points out, in a subsequent communication, that it has previously been described by himself and Filhol, and that, if dried *in vacuo* over H_2SO_4, it contains 3 molecules of H_2O; when exposed to a current of dry air at ordinary temperature it retains fifteen molecules of water of crystallisation.—*Comptes rend.*, **134**, 604 and 713.

YELLOW SILVER ARSENITE. J. A. Wanklyn finds that the yellow compound obtained by passing AsH_3 into a solution of $AgNO_3$ is not, as generally stated, $2Ag_2O \cdot As_2O_3$, but has the composition $3Ag_2O \cdot As_2O_3$. It separates from the solution after filtering out the reduced silver, on cautiously neutralising with ammonia. The same salt was obtained quantitatively, by the interaction of a known quantity of As_2O_3 with excess of $AgNO_3$, and neutralising with ammonia. The yellow $3Ag_2O \cdot As_2O_3$ thus obtained retained its colour on drying at 100° C. —*Chem. News*, **85**, 181.

CHEMISTRY OF SCUTELLARIA. Molisch and Goldschmeidt have found in *Scutellaria altissima*, scutellarin, $C_{21}H_{20}O_{12}$, together with cinnamic and fumaric acids. Scutellarin is split up by treatment with H_2SO_4 into scutellarein and another body, which has not been isolated, but no formation of sugar appears to result from the reaction. Scutellarein combines with mineral acids, and is decomposed by alkalis into phloroglucin and para-oxy-benzoic acid. It would appear to be a flavone body. Scutellarin occurs in all the organs of the plant, and a similar, if not identical body, exists in other species of *Scutellaria* and in certain other Labiates.—*Pharm. Centralh.*, **42**, 617, after *Chem. Zeit.*

CHEMISTRY OF MANDRAGORA ROOT. O. Hesse, reviewing the work of Wentzel, Thoms (*P.J.* [4], **13**, 1), and others, finds that the total alkaloidal content of the root examined was 0·417 per cent. The base present in greatest quantity was hyoscyamine; accompanying this are hyoscine, $C_{17}H_{21}O_4N$, pseudo-hyoscyamine, $C_{17}H_{23}O_3N$, and mandragorine, $C_{15}H_{19}O_2N$. The alkaline liquid from which the bases were shaken out with ether contained scopoletin. Hyoscine was isolated as the hydrobromide from the bases precipitated by $NaHCO_3$. Pseudo-hyoscyamine was found in the mother liquor after this precipitation. Its hydrobromide does not crystallise from alcohol. The gold salt $C_{17}H_{23}O_3N \cdot HAuCl_4$ melts at 174°. Mandragorine was isolated by precipitating the mother liquor of pseudo-hyoscyamine with NaOH. It occurs as an oily, strongly alkaline base. On decomposition it forms atropaic acid, and another base which crystallises with difficulty. Its aurichloride, $C_{15}H_{19}O_2N \cdot HAuCl_4$, melts at 124-126°.—*Chem. Centralb.* [2], **72**, 1,016, after *Journ. Prakt. Chem.*

SECRETION BY EXTRA FLORAL NECTARIES. Amongst the plants possessing extra floral nectaries which Hugo Haupt investigated were *Prunus laurocerasus*, *P. padus*, *P. avium*, *Viburnum opulus*, *Sambucus racemosus*, *Vicia Faba*. He found that the secretion of water varied with the amount of moisture in the air; the more humid the air, the greater the amount of water given off. This is correlated with the decrease in transpiration from the leaves. The amount of sugar extruded does not, however, vary. Light as a rule has no effect upon the secretion of nectar except in the case of *Vicia Faba*, *Ricinus communis*, and some Euphorbias, which will not secrete unless they are placed in strong sunlight. In other cases nectar is given off as long as the vegetative parts are assimilating. There is a minimum temperature, about 8° C.—12° C., below which young nectaries will not begin to secrete, but when they have once begun, then there may be a diminution, but not a cessation, even when the temperature falls much lower. Æsthetics applied as weak solutions from 2 per cent. to 5 per cent. lead to an increase in the amount of fluid given off, though, of course, stronger solutions are poisonous.—*Flora*, **90**, 1.

THE GLACIAL ACETIC ACID TEST FOR OIL OF TURPENTINE.

BY F. H. ALCOCK.

As a contribution to the present discussion on the above subject the following experiments were made, which, when read in conjunction with Messrs. Squire and Caine's note (see *P.J.*, *ante*, p. 512), may be of interest to readers of the Journal who have followed the controversy. A sample of oil of turpentine (No. 1), with which all my experiments previously reported have been made, was found to be perfectly miscible with an equal volume (5 C.c.) of glacial acetic acid, the strength of which was found by titration to be 99·454 per cent. by weight, using phenol-phthalein as an indicator. Absence of all other acids was proved by experiment. Samples of oil Nos. 2, 3, 4, and 5 did not mix with the same acid under similar conditions.

No. 2 and No. 3 oil were obtained from Messrs. Williams and Company, of our city, but were not obtained from the same retailer.

No. 4 and No. 5 were obtained from Messrs. Southall, but were procured from different retail shops and taken direct from the original bottle by myself and put into dry bottles. The labels in all cases were supplemented by the legend "B.P.," and so far as experiments showed they corresponded to the other official tests.

Sample No. 6 was taken directly by myself from a large ten gallon drum labelled "Genuine American Spirits of Turpentine, Messrs. Pilcher, Limited, London;" and was used and sold by a friend for all purposes other than dispensing and official requirements. This mixed perfectly with the glacial acetic acid in equal volumes. A closer examination of this was made. Its s.g. was 0·90. Fifty cubic centimetres was subjected to distillation. The thermometer registered from 320° to 340° F. during the process. The first 5 C.c. came over turbid, and was not miscible with an equal volume of acid. Nor was the next 25 C.c. miscible. A further 10 C.c. was perfectly miscible, and the residue, which remained in the retort and was somewhat thick and of a light brown colour, did not dissolve wholly in an equal volume of acid, even when warmed to 212° F., nor when a double volume of acid was added.

Distillation of the distillate over $CaCl_2$, and also over quicklime, did not promote miscibility with the acid. Neither did rectification over stick KOH and NaOH. The distillate was slightly acted upon by metallic sodium with effervescence.

A few fragments of sugar appeared to slightly dissolve in 10 C.c. of the distillate, and generally the whole experiments pointed to the presence of a disturbing agent in the distillate (water?), which was not in the way of miscibility, in the original. It is remarkable how small a quantity of water disturbed the miscibility of No. 6 and the acid, the quantity dropped from a capillary tube scarcely increasing the volume of 10 C.c. contained in a graduated test tube.

One of my students has taken an interest in this matter and brought from his shop in Coventry a sample of acid and a sample of oil of turpentine. The former was 99·167 per cent. strength and mixed clearly in equal volumes with his own sample of turpentine, which was apparently genuine, as also with samples No. 1, No. 4, and No. 6. Clearly the very innocent note attributed to myself which appeared in the Journal some time ago has proved a most curious "bone of contention."

Sodium Cinnamate.—A. Mann continues to report favourably on the value of sodium cinnamate in tuberculosis. It has a marked influence on the increase of the leucocytes, doubling their number. In cystic disease it is as effective as benzoic acid, although much cheaper.—*Med. Press*, **124**, 568.

THE SOLUBILITIES OF CHEMICAL SUBSTANCES MENTIONED IN THE BRITISH PHARMACOPŒIA (1898).*

BY HENRY G. GREENISH, F.I.C.,
Professor of Pharmaceutics to the Pharmaceutical Society of Great Britain,
and
F. A. UPSHER SMITH.
Demonstrator in the Pharmaceutical Society's Pharmacy Research Laboratory.

Magnesii Sulphas.

Traces of chlorides only were found in this salt. It was quantitatively determined by precipitation as magnesium ammonium phosphate in the usual way, ignition and weighing of the resulting magnesium pyrophosphate. 0·5 Gm. of salt gave 0·21 Gm. residue; the Pharmacopœia requires 0·22 Gm.

Solubility in Water.—Thorpe's 'Dictionary' states that the salt is rendered anhydrous at 200° C. The solutions were, therefore, evaporated and the residues heated at this temperature until a constant weight was obtained.

Time.	Temperature.	Specific Gravity.	Solubility by Evaporation.
Twenty-three days	60° F.	1·2755	1 in 0·968
		Duplicate	1 in 0·987

Result.—Solubility in water, at 60° F., 1 in 0·98.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 1
United States Pharmacopœia	1 in 1·5
German Pharmacopœia	1 in 1

Zinci Acetas.

Qualitative tests showed a trace of chloride only.

Solubility in Water.—Experiments were first made to determine whether the salt crystallises with two or three molecules of water. The salt official in the British Pharmacopœia is one with three molecules of water, but that official in the United States Pharmacopœia is one with two molecules, the latter statement being in accordance with the work of Dibbit and Franchimont[21]. The latter states that both molecules of water are lost at 100° C.

We heated 0·5401 Gm. of the salt to 100° C. and to a higher temperature for definite times and observed the loss. By calculation 0·5401 Gm. of a salt having the composition $Zn(C_2H_3O_2)2, 2H_2O$ should yield 0·4514 Gm. of anhydrous salt.

The following are the actual figures obtained:—After one hour at 100° C., 0·4565. After three hours at 100° C., 0·4311. The same after one hour at 120° C., 0·3406. The same after four hours at 120° C., 0·2379.

The salt was dissolved in water in order to spread it over the dish, and on heating on a water-bath the odour of acetic acid was distinctly observed. Hence the salt appears to lose acetic acid when its solution is heated. It will be observed that the figures just given lend support to the formula with two molecules of water. Other experiments were made to obtain, if possible, a constant weight by similarly evaporating the solution and drying the residue at 100° and at 120° C. The following figures give the weight of covered dish and residue at intervals:—After three hours at 100° C., 39·5860. After four hours at 100° C., 39·5563. After six hours at 100° C., 39·5315. The same after one hour at 120° C., 39·4741. The same after four hours at 120° C., 39·3764.

It is seen, therefore, that this salt should not be heated in aqueous solution and that its solution cannot be assayed by evaporation.

The solutions were therefore assayed gravimetrically by precipitation by sodium carbonate and ignition of the washed precipitate. The residual ZnO was calculated into $Zn(C_2H_3O_2)_2$, $2H_2O$.

Time.	Temperature.	Specific Gravity.	Solubility by Assay.
Five days	60° F.	1·1650	1 in 2·43
		Duplicate	1 in 2·37

Result.—Solubility in water at 60° F., 1 of $Zn(C_2H_3O_2)_2$, H_2O in 2·40. If the salt be taken as $Zn(C_2H_3O_2)_2$, $3H_2O$; then this figure becomes 1 in 2·11.

Comparison with authoritative statements:—

British Pharmacopœia	2·5
United States Pharmacopœia	2·7
German Pharmacopœia	3·0

Zinci Chloridum.

This salt was qualitatively tested and found to be free from the impurities enumerated in the Pharmacopœia.

Solubility in Water.—The deliquescent nature of this salt rendered it necessary to adopt some quantitative method of determination. It was decided to try the method of Volhard[22] for the determination of chlorides in acid solution, owing to the necessity for adding acid to remove the turbidity resulting from dilution of the saturated solution of zinc chloride.

This method is an excellent one. It depends on the precipitation of chloride by excess of silver nitrate solution, and titration of the excess of the latter with potassium thiocyanate solution, the end reaction, which is perfectly sharp, being distinguished by the formation of red-brown ferric thiocyanate due to the presence of a few drops of the indicator, a solution of ferric salt. The solutions required are approximately N/10 silver nitrate, N/10 thiocyanate, and a 10 per cent. aqueous solution of iron alum. The exact strength of the silver solution being known, it remains to standardise the thiocyanate solution against it, using the iron solution as indicator. In practice 20 C.c. of the silver nitrate solution are run into a known deficiency (as found by preliminary experiment) of chloride solution. The precipitated silver chloride is filtered off because of the solvent action upon it of the thiocyanate solution. The filtrate and washings are then titrated with thiocyanate solution in the presence of 4 C.c. each of iron alum solution and strong nitric acid. The volume of thiocyanate used is expressed in terms of silver nitrate solution and deducted from the volume of silver solution originally taken. The remainder is then calculated into chloride.

In diluting the solutions for assay we added enough nitric acid to keep the oxychloride in solution.

Time.	Temperature.	Solubility by Titration.
Three weeks	60° F.	1 in 0·344
	Duplicate	1 in 0·344

The specific gravity was not taken, owing to the dense syrupy liquid requiring too long to filter. For filtration from oxychloride it was necessary to use an asbestos plug and the exhaust pump, owing to the solvent action of the solution on paper and the slowness of filtration.

Result.—Solubility in water, at 60° F., 1 in 0·344.

Comparison with authoritative statements.

British Pharmacopœia	Almost entirely
United States Pharmacopœia	0·3
German Pharmacopœia	Easily

Remarks.—We consider Volhard's method might with advantage be used in the quantitative determination of so potent a chemical as zinc chloride and its solution.

Zinci Sulphas.

This salt was qualitatively examined and found to be free from the impurities given in the official test.

Solubility in Water.—It was thought that simple evaporation would serve for the determination of the strength of the solutions. According to Watts's Dictionary a salt of the composition $ZnSO_47H_2O$ gradually becomes anhydrous at 280° C., but at this temperature some basic sulphate may be formed.

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* Communication from the Research Laboratory of the Pharmaceutical Society of Great Britain. Concluded from page 533.

[21] *Berichte d. Deutsch. Chem. Gesellschaft*, 1879, p. 11. 'U.S. Dispensatory,' p. 1,471.

[22] Sutton's 'Volumetric Analysis,' 7th edition, p. 163.

In Thorpe's Dictionary it is stated that $ZnSO_4H_2O$ is formed by heating $ZnSO_4 \cdot 7H_2O$ to 110° C. until it ceases to lose weight. Roscoe confirms this statement and adds that the last molecule is only evolved at a red heat. We obtained satisfactory results by heating the residue, after evaporation, to 110° C., calculating the residue as $ZnSO_4,H_2O$.

Time.	Temperature.	Specific Gravity.	Solubility by Evaporation at 110° C.
Sixteen days	58	1·450	1 in 0·648
Twenty-three days	59·5	1·452	1 in 0·650

Result.—Solubility in water, at 59·5° F., 1 in 0·65.

Comparison with authoritative statements.

British Pharmacopœia	1 in less than 1 by ight
United States Pharmacopœia	1 in 0·6
German Pharmacopœia	1 in 0·6

Zinci Sulphocarbolas.

Tested qualitatively this salt was found to be free from the impurities anticipated in the Pharmacopœia. The solubility of the salt in alcohol, as mentioned by Proctor[23] is a useful indication of the absence of zinc sulphate.

Solubility in Water.—Reference was made to the literature to obtain information about the temperature at which this salt becomes anhydrous, but none was forthcoming. On consideration it might be thought that zinc phenol-parasulphonate would be fairly stable, owing to the fact that it is a para salt. Experiments were made to determine whether the salt yielded a constant weight when dried at a given temperature. Thus, 0·4833 Gm. of the salt was dissolved in water and evaporated on a water bath. If the salt, of the official formula, $Zn(OH \cdot C_6H_4SO_3)_2H_2O$, becomes anhydrous the weight taken should yield 0·4630 Gm. of anhydrous salt.

The following are the actual results obtained:—After one hour at 100° C. the residue weighed 0·3887 Gm. After three hours at 100° C. the residue weighed 0·3875 Gm. The same after one hour at 120° C. the residue weighed 0·3560 Gm. The same after four hours at 120° C. the residue weighed 0·3560 Gm.

The solubility was, therefore, determined gravimetrically by precipitation with sodium carbonate as usual.

Time.	Temperature.	Specific Gravity.	Solubility by Assay.
Twenty-three days	60° F.	1·162	1 in 2·72
		Duplicate	1 in 2·68

Result.—Solubility in water, at 60° F., 1 in 2·7.

Comparison with Authoritative Statements:—

British Pharmacopœia	1 in 2

Name of Salt.	Temp. Fah. Deg.	Solubility found.	British Pharmacopœia.	German Pharmacopœia.	United States Pharmacopœia.
Acidum Arseniosum	61	Crystalline 1 in 71 Amorphous 1 in 63	1 in 100		1 in 80 1 in 30
Acidum Boricum	60	1 in 25	1 in 30	1 in 25	1 in 25·6
Acidum Chromicum	61·5	1 in 0·59	Very soluble		Very soluble
Acidum Citricum		1 in 0·51	1 in 0·75	1 in 0·54	1 in 0·63
Acidum Tartaricum	61 60	1 in 0·71	Readily in less than 1	1 in 0·8	1 in 0·8
Alum (Ammonium)	59·5	1 in 9·95	1 in 10	1 in 10·5 (Potass. alum)	1 in 9 (Potass. alum).
Alum (Potassium)	59·5	1 in 9·70			
Calcii Chloridum	60	$CaCl_2$ 1 in 1·41 $CaCl_2 2H_2O$ 1 in 0·82	1 in 1		1 in 1·5
Cupri Sulphas	61	1 in 2·79	1 in 3·5	1 in 3·5	1 in 2·6
Lithii Citras	59	1 in 1·625	1 in 2		1 in 2
Magnesii Sulphas	60	1 in 0·98	1 in 1	1 in 1	1 in 1·5
Zinci Acetas	60	$ZnAc_2 2H_2O$ 1 in 2·40 $ZnAc_2 3H_2O$ 1 in 2·11	1 in 2·5	1 in 3	1 in 2·7
Zinci Chloridum	60	1 in 0·344	Almost entirely soluble	Easily	1 in 0·3
Zinci Sulphas	59·5	1 in 0·65	1 in less than 1	1 in 0·6	1 in 0·6
Zinci Sulphocarbolas	60	1 in 2·70	1 in 2·0		

Experimental Data.

To Convert to—

$MgSO_4$	$MgSO_47H_2O$	Add log.	0·31116
ZnO	Zinci Sulphocarb. H_2O	,,	0·72245
,,	Zinci Acet. $2H_2O$	,,	0·43076
Li_3Cit	$Li_3Cit. 4H_2O$	,,	0·12806
Al_2O_3	$Al_2(SO_4)_3(NH_4)_2SO_4 \cdot 24H_2O$	,,	0·94811
Al_2O_3	$Al_2(SO_4)_3, K_2SO_4 \cdot 24H_2O$	,,	0·96781
$Al_2(SO_4)_3(NH_4)_2SO_4$	$Al_2(SO_4)_3, (NH_4)_2SO_4 24H_2O$	,,	0·28126
$Al_2(SO_4)_3K_2SO_4$	$Al_2(SO_4)_3, K_2SO_4 24H_2O$	,,	0·26405
$ZnSO_4$ Aq.	$ZnSO_4 7H_2O$	,,	0·20474
$Al_2(SO_4)_3 K_2SO_4$ Aq.	$Al_2(SO_4)_3K_2SO_4 24H_2O$	,,	0·24999
$CuSO_4$	$CuSO_4 5H_2O$	,,	0·19431
Li_2SO_4	$Li_3Cit 4H_2O$	,,	0·23261

1 C.c. N/10 KOH = 0·0062 Gm. H_3BO_3

Corrections.

Under Lithii Citras we have pointed out an error in Kebler's calculation of the solubility of the hydrous salt from that which he had experimentally obtained of the anhydrous salt. This led us to revise our calculations in similar cases. In a few instances in our last report on solubilities, (*Pharmaceutical Journal*, June 22, 1901), we have expressed the solubilities in terms of grammes of anhydrous salt in cubic centimetres, and all these solubilities are correctly given. But we find that in calculating from such figures the solubility of the official salt containing varying quantities of hygroscopic moisture or water of crystallisation, we have, in some instances, inadvertently fallen into a similar error. The differences are, as a rule, but slight, but we have thought it desirable to point them out in the following table, which gives the corrected figures for the salts of the purity demanded by the Pharmacopœia.

Potassii Carbonas	For 1 of official	salt in	0·75	read 1 in	0·61
Sodii Hypophosphis	,,	,,	0·78	,,	0·63
Sodii Salicylas	,,	,,	0·88	,,	0·83
Potassii Acetas	,,	,,	0·379	,,	0·279
Sodii Benzoas	,,	,,	1·68	,,	1·64
Potassa Caustica	,,	,,	0·772	,,	0·647
Potassii Citras	,,	,,	0·61	,,	0·55
Potassii Tartras	,,	,,	0·658	,,	0·625
Soda Tartarata	,,	,,	1·392	,,	1·138

THE UBIQUITOUS MICROBE.

BY AN ENGLISH PHARMACIST IN PARIS.

A correspondent, signing himself "Docteur Ox," strikes a warning note to readers of *Le Matin*, and explodes a popular fallacy so fondly cherished for ages past respecting the virtue of town and sewer refuse as a manure for the soil of the country. This, he states, is due to a recent decision of the Minister of Public Works, prohibiting the cultivation upon soil watered with sewerage, of vegetables and fruit destined for raw consumption.

Is sewerage then no longer the most perfect and inoffensive of fertilisers? And the soil of the country, is it no longer the purifying filter it has for all time been thought to be? Vegetables cultivated in this purifying (?) soil are then capable of absorbing microbic germs which ought not to be found there?

Fifteen years ago it would not have been well with the individual who had dared to pose such questions, for at that epoch it was duly and firmly believed that

(1) The cultivated soil is the best of filters, in fact, the ideal filter, since not only does it not permit the passage of microbes, but it destroys them. And as proof of the fact, the water flowing in the drains of Gennevilliers was so pure that the members of the official commissions partook of it and declared it far superior to the best of table waters.

(2) That, moreover, "pathogenous" microbes did not get on very well with the "saprogenous" microbes which polluted sewer water, and that these delicate and aristocratic mischief-makers were unable to support the sickening promiscuousness of

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[23] 'Pharmaceutical Testing,' p. 179.

the vulgar bacilli of putrefaction, and that in contact with these latter, the former quickly perished.

(3) That the rootlets of plants are also the elective filters which preclude the passage of bacilli lurking about in their neighbourhood. This, moreover, had the endorsement of eminent bacteriologists, who, themselves, cultivated vegetables in soil watered with sewerage, and upon the most careful examination failed to find the least trace of microbes.

Coming from a Government Commissary, these facts seemed weighty enough to dispel the deepest rooted misgivings in any who may have entertained them.

But to-day we are rudely awakened to the disagreeable fact that vegetables grown upon soil watered by sewerage are sources of danger, and should not be eaten raw for fear of microbes; rather hard. True, by way of consolation, as it were, the danger for the present seems to be limited to vegetables which grow about the level of the soil, such as radishes, salads, etc. Such as grow at a distance from it, like tomatoes, artichokes, etc., do not—at present, at least—fall under that category. Still, there seems little assurance that later we may not hear that these, like their low-lying kin, may be yoked with the same curse. 'Twould be well to beware, for this opinion may yet undergo some modification.

Sewer water most assuredly does contain pathogenous microbes, and what is equally as sure, they do not become devoured by their saprogenous comrades. And the rootlets of vegetables and plants, ignoring their elective functions, absorb all with the same indifference.

Not many months ago a German bacteriologist was curious to know what was the ultimate fate of the tuberculosis bacilli when they finally found their way into the sewers. One might be pardoned for hoping that they became drowned or asphyxiated. But no such luck; far from it; they thrived better there than in the open air or in river water.

It is upon the virulence of a microbe that its vitality depends. For, whereas in river water the virulence of the tuberculosis bacilli is practically nil at the end of three months, in sewer water it has been found as active at the end of ten months as it was the first day. This same bacteriologist, having met with success in that quarter, was encouraged to ascertain what fate awaited Koch's bacillus when introduced into cultivated ground.

Did its virulence become modified? Was it destroyed?

Not a bit. He sowed radish seeds in a flower pot and watered them with sewerage containing tuberculosis sputum which he had previously preserved for forty days. Three months later he found in this cultivated soil the tuberculosis bacilli in all their virulence.

Just recently two distinguished French bacteriologists, Messrs. Bourges and Wurtz, have pushed these experiments still further. They resolved to see if it were not possible to find the Koch bacillus *in* the radishes, etc., sown in tuberculised soil. To this end three flower-pots were filled with soil and sown respectively with radish, lettuce, and cress seeds. They were duly sprinkled from time to time with water containing the Koch bacilli. At the end of a certain period portions of leaves were broken off and inoculated into the peritoneum of several guinea-pigs. In eighteen out of thirty cases the results were positive—that is to say, that the tuberculosis bacilli had passed from the soil in which the seeds had been sown into the leaves of cress, radishes, and lettuce. Messrs. Bourges and Wurtz have made a similar experiment with the bacillus of typhoid fever.

This time, not eighteen out of thirty, but in every case the bacillus was found with the greatest facility in the leaves of the vegetables experimented upon.

Not only do vegetables absorb microbes, but their process of progressive development assists in drawing the microbic germs from a considerable depth to the surface of the soil.

Pasteur had already demonstrated that in the fields of Beauce (Indre-et-Loire) in was the worms which played the rôle of exhumer of microbes and, bringing to the surface the anthrax spores interred with the sheep which had died of the disease, maintained in that region an epidemic of anthrax. According to Drs. Bourges and Wurtz, plants and vegetables can play exactly the same rôle, and bring to the light, along their stems and leaves, the microbes buried in the depth of the soil.

It is thus easy to account for the periodic epidemics of cholera or choleriform diarrhœa, which up to the present have, by their sudden and unaccountable appearance, so perplexed epidemiologists. Whilst this authenticated and interesting experience will be welcome to the epidemiologists, it will be a sorry blow to lovers of radishes, salads, etc.

THE ADULTERATION OF DRUGS.*

BY LYMAN F. KEBLER.

(Concluded from page 536.)

Simple Drugs and Allied Products

Beeswax.—This is one of the most frequently adulterated commodities met with. In former years adulterations were of a very gross nature, but within recent years it has been manipulated in a very skilful manner. With ceresin having a colour and a melting point practically the same as beeswax, it is very easy to manipulate beeswax with this article; but the difficulty does not end here, for the up-to-date adulterator knows that beeswax is at present examined in other ways than simply physical appearance and the application of a few crude tests, consequently he has endeavoured to so adulterate the wax that it will comply with nearly all the tests to which this article is usually subjected. By adding a little stearic acid he is enabled to bring up the acid number, which has been lowered by the addition of ceresin, and a little tallow or japan wax will adjust the disturbed saponification number. From this it can readily be seen that he is practically in position to make an artificial beeswax which will comply with the specific gravity test, acid number, and ether number. The melting point can be adjusted by properly selecting the adulterants. There is only one test left us now, and that is the detection of stearic acid by Fehling's method. It should be noted in this connection that we frequently find stearic acid in beeswax, which we have every reason to believe comes from a good source. The reason for the presence of this stearic acid is best explained by remembering that it is not a very unusual thing for beeswax and tallow to be handled together, and accidentally a sample of the latter may find its way into the former. On subsequently purifying the beeswax with dilute sulphuric acid, the tallow is saponified with the production of stearic acid and glycerin, the stearic acid finding its way into the beeswax, while the glycerin remains in the liquid portion. Beeswax is also occasionally found adulterated with paraffin and added colouring matter.

Japan Wax is an Asiatic product, and several years ago a large importation was made. On arrival of the consignment it was found that the goods were liberally adulterated with corn-starch. It was not evident where the Chinaman was enabled to secure his corn-starch, and upon investigation all evidence pointed to the fact that the wax had been manipulated in the United States. The added starch amounted to 20 per cent. After the exposure of this fraud very few cases of similarly adulterated material came to hand, and it is quite probable that this fraudulent material had been entirely withdrawn from the market. The starch was readily discovered with the microscope. A ready method for detecting the presence of starch is by applying a few drops of tincture of iodine directly to the wax by means of a pipette, and if starch is present the starch-iodine reaction will manifest itself immediately.

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* From the *American Journal of Pharmacy*.

Aconite Root Adulterated with Tormentilla. — It would seem on first thought that such a clumsy adulteration as the above would be too apparent for anyone to practise. This point we will not gainsay, but an inspection of the samples will convince anyone that a hasty examination would not reveal this adulterant, inasmuch as many of the tormentilla roots grow in form similar to aconite root.

Capsicum vs. Paprika.—The U.S. and the British Pharmacopœias recognise *C. fastigiatum*, Blume, while the German Pharmacopœia recognises *C. annuum*, L. The latter is generally considered the source of paprika. The U.S. *Bulletin*, No. 13, on "Spices and Condiments," classes paprika as cayenne. It is, therefore, not surprising that many of us are of the opinion that these two articles are one and the same, but a comparison of samples will show that there is a vast difference. The colour of paprika varies from scarlet to yellow. As a matter of fact, there are a number of species of capsicum and a host of varieties, all varying more or less in degree of pungency. The degree of pungency and certain particular flavours are said not to be due only to the species, but also to the method of cultivation and locality. About a year ago the writer's attention was called to what was considered to be red pepper. An investigation showed, however, there was a decided difference in physical appearance to begin with between this powdered article and that of the genuine product; the colour was considerably brighter, and only about one-sixth as pungent as genuine red pepper. A tincture prepared from it also presented an abnormal reddish cast. On submitting the paprika to a quantitative examination it was found that there is practically little difference between the data obtained for this article and the usually accepted constants for capsicum. A microscopic examination did not offer any assistance. It can thus readily be seen that with such an article as this the adulterator has in his hands a most efficient diluent of red pepper. That paprika (*C. annuum*, L.) should be substituted for *Capsicum fastigiatum*, Blume, is really not new, for Flückiger and Hanbury, 'Pharmacographia,' 2nd ed., page 452, says:—"It furnishes the largest kind of pod pepper and, as we believe, much of the cayenne pepper which is imported in the powdered form." In the 'American Dispensatory,' 1898, page 434, we find:—"It (*C. annuum*) undoubtedly forms a large part of ground red pepper."

Cochineal (Silver and Black).—Pure (black) cochineal is of a purplish-grey or purplish-black colour, and it is surprising how few druggists know or have even seen the pure article. It is the general custom to add some white material to the pure cochineal in order to bring out the silvery appearance (*sic!*) which is so characteristic of the commercial cochineal. The kind and amount of added material varies quite considerably, being, as the writer has found, sometimes barium sulphate to the extent of 30 per cent., talcum, calcium sulphate, calcium carbonate, and magnesium carbonate.

Elm Bark, Powdered.—It is a common occurrence to find this article adulterated with wheat flour. As much as 30 per cent. has been met. The microscope will reveal this diluent.

Jaborandi Leaves Mixed with Twigs, Stems, and Sticks, to the extent of 20 per cent.—While this probably does not come directly under the heading of adulteration, as it is usually understood, yet there can be no doubt in anyone's mind present that an undue amount of such substances must have been added with a purpose, for it is well known that the addition of such products must necessarily impair the medicinal efficiency of the drug to which they have been added. In the liberal sense of the word, they must be considered adulterants. This is simply an example of many drugs that are found containing such added foreign material. Frequently as high as from 10 to 30 per cent. of such matter is found in crude drugs. If crude drugs free from such diluents and other impurities and *débris* cannot be purchased in the open market, garbling must necessarily be resorted to before use. In powdered form it is difficult to detect such impurities. It might also be stated in this connection that roots sometimes contain as high as 20 per cent. of earthy matter. Such drugs are not fit for medicinal use.

Lactucarium.—There is no doubt as to what the nature of this article should be. The U.S. Pharmacopœia distinctly specifies what is wanted. During the past year, when lactucarium was materially advanced in price, there was received extract of lettuce when lactucarium was wanted. It seems that anything of this character should be repudiated in the most vigorous terms, because the two articles are so entirely different and distinct that there is no possibility of confusing the one with the other, except for pecuniary gain.

Rock-Candy Syrup is probably an article which is used as freely by many druggists as any other commodity they deal in, and it is well known that it generally contains a small percentage of invert sugar, which finds its way into the syrup in the course of its manufacture by atmospheric influences. Certain dealers having knowledge of this thought that a little more reducing sugar would not do any harm, and consequently, when rock-candy syrup was ordered, they supplied glucose of the same specific gravity as the rock-candy syrup usually furnished. A superficial examination might not have revealed the nature of this fraud, but it is easily detected by the application of Fehling's solution, or placing a suitable quantity of the syrup into a porcelain capsule, then evaporating on a steam or water bath. A glucose syrup will simply assume a heavier body, while pure rock-candy syrup will dry completely, with either distinct crystals or crystalline crusts, or both.

Venice Turpentine.—There are at present at least three articles on the market which pass under this name. One is the genuine Larch Venice turpentine, another is an imported artificial product, and the third is a domestic artificial product. The genuine article brings quite a good price, and, being of such a composition that it is very difficult to get at the actual component constituents, the adulterator has worked along the lines of substitution so skilfully as to be able at present to imitate the genuine article very closely at a very much lower cost. Certain data have, however, been worked up in connection with pure Venice turpentine, which up to the present time the sophisticator has not been fully able to comply with. The writer is at present collecting certain data upon this question, and hopes to make them public in the near future. Some useful information will be found in the *Amer. Jour. Pharm.*, vol. 73, page 198, 1901. The artificial product consists for the most part of specially selected rosin dissolved in oil of turpentine. Another article has also been met with which had a decided fluorescence, and proved upon investigation to consist of rosin or allied bodies dissolved in a fluorescent rosin oil, mixed with a little turpentine.

Gum Acacia.—On looking over the various price-lists we find that there are at least five distinct varieties of this gum, varying very materially in price. There are only the following conclusions to arrive at, namely:—The lower grades of acacia are spurious products or they are gums of an inferior quality. The latter is probably the correct explanation, inasmuch as we find upon examining the various grades that there are very few which will stand the Fehling test. This test indicates that there are associated with these poor gums certain substances which ought not to be present in a first-class article. The point naturally presenting itself in this connection is, How are we to decide whether a sample of a gum of acacia submitted is of an A

No. 1 quality, or whether it contains more or less of the selected portions of the inferior grades or other gums? Chemical tests practically fail us. To be sure, we have the ash test, the optical rotatory power, the ferric chloride-solution test, the relative viscosity, etc., but after applying all these tests and asking ourselves this question, Is the sample submitted genuine gum arabic? we are compelled to say we do not know. The writer is inclined to believe, from the fact that there is very little gum acacia which will not reduce Fehling's test solution, at even a slightly prolonged elevated temperature, that very little A No. 1 gum acacia is found in the market. The various grades are probably differently selected gums from the same or similar sources.

Gum Tragacanth shares the common fate of gum acacia, inasmuch as the best quality is about twice as expensive as the lower grades, and with this article we are practically unable to do anything relative to deciding between the inferior and the superior product. There do not seem to be any marked differences except physical appearance and the viscocity test between the expensive and the cheaper articles. It can readily be seen, therefore, that the one is liable to be substituted for the other, especially in powdered form, in cases where the greatest care is not exercised by the purchaser.

Gum Kino.—During the past few years the official product appears to have been in the hands of a monopoly, and an article has been supplied occasionally which represented the genuine very closely. In fact, there appeared to be so very little difference between the genuine article and that supplied that it was necessary to resort to chemical analysis in order to differentiate between them. One sample, nevertheless, complied with the usual tests so closely that it was impossible to find a point of distinction, except that the fresh official product possessed a slight aromatic odour which the sample supplied did not have, but this cannot be considered a distinguishing feature, inasmuch as all gum kinos will lose their peculiar aroma in process of time. This sample contained even more tannin and was more readily soluble in alcohol and in water than the pharmacopœial article, as the following results clearly show:—

Kind.	Ash, Per Cent.	Insoluble in 95 Per Cent. Alcohol.	Insoluble in Water.	Per Cent. of Tannin.
True	1·48	8·20	31·04	51·07
,, ...	0·84	10·54	26·88	43·91
Unknown	1·14	7·08	1·16	57·26

The sample marked "unknown" is the one referred to above.

Aloes.—It is well known that the various kinds of aloes are substituted one for the other, and it is quite unnecessary to make much comment in this connection. Very little Barbados finds its way into commerce. That which is labelled as such and put up in the usual Barbados package is conceded to be for the most part pure Curaçoa. There are reasons for believing that Curaçoa is also sold for the other kinds of aloes. We may be in a position in course of time to be able to apply tests which will distinguish between these several varieties, inasmuch as very extensive chemical investigations are at present being made on the composition of these gums.

Gum Asafœtida.—The poor quality of asafœtida has during the past few years been brought up on a number of occasions. It is referred to here simply to give additional testimony to the inferior quality of the article as usually supplied to the trade in this country. The adulterants are chiefly calcareous rocks and other earthy matter

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Lactanin.—Under this name a bismuth compound, stated to be bismuth dilacto-mono-tannate, has been introduced as a remedy for diarrhœa, chronic and acute enteritis, and other intestinal disorders. It occurs as a yellow, odourless and tasteless powder, which is insoluble in water. It is best prescribed in suspension in syrup of gum.—*Pharm. Post*, 35, 135.

FACTS AND FANCIES.

BY AN ORDINARY PHARMACIST.

The Preparation of Compressed Tablets.

In an article recently published in the *Pharmaceutical Journal* (*ante*, p. 453), Mr. J. A. Forret referred to my notes on the preparation of compressed tablets, and asked several questions in relation thereto. With regard to passing the material through a sieve, that is a matter for experience to decide. It may suffice in most cases, and especially when working with small quantities, to dry the pasty mass, then powder carefully and sift, but in some instances it is advantageous—as I explained in describing the general method of procedure—to pass the material twice through a sieve, once directly after moistening and a second time after drying the granulated powder. Secondly, I should not like to say that it is impossible to compress salicylates satisfactory, and free from iron salicylate round the edges, unless silver-plated dies and punches be used, but that again is a point to be decided by experiment. I do not profess to have made tablets from all the formulæ which I took the trouble to collect from various sources, and purposely asked for comments and suggestions from readers who might have occasion to try any of the formulæ. Thirdly, I have not made saccharin tablets, and have only recently met with formulæ for such in a recently published work by F. Utz, entitled 'Das Komprimieren von Arnzeitabletten' (Berlin: Julius Springer). One formula, which may be what Mr. Forret requires, directs that three parts of saccharin should be mixed with seventeen parts of milk sugar and the mixture granulated with 90 per cent. alcohol. Whether this or any other formula be adopted, saccharin tablets should be prepared by subjecting the material to slight pressure only. In the same work it is directed that sodium salicylate should be prepared for compression by mixing five parts of the compound with ten parts of sodium bicarbonate and two of milk sugar, then granulating the mixture with absolute alcohol and subsequently drying by the application of a moderate heat.

The Next U.S. Pharmacopœia.

The Pharmacopœia of the United States is not an official publication like the British Pharmacopœia, but it is generally regarded as a model of what such works should be, and the last edition has been of especial interest to pharmacists on this side of the Atlantic, inasmuch as its contents appear to have been largely utilised by the compilers of the 1898 B.P. A new edition of the U.S.P. is being prepared by a representative committee, of which Professor Remington is chairman, and may be published next year, though it will bear the date 1900, in accordance with the established American practice, the actual work of revision having been begun in that year. According to W. O. Richtmann, whose observations on the subject are published in the *Pharmaceutical Review* for the current month, it has been provisionally decided to omit a hundred and forty-four crude drugs, chemicals, and preparations from the 1900 U.S.P., including fourteen which enter into some preparation that is to be retained in the work. Thus, it is proposed that Aloe Socotrina should be omitted, though Aloe Purificata and Extractum Aloe, both of which are prepared therefrom, are to be retained. Obviously, therefore, some special provision must be made in regard to those two preparations, in the direction of amplifying the official descriptions. All the sulphur compounds of antimony are to be omitted, with the exception of Antimonium Sulphuratum, but if the latter be retained some provision must be made for its preparation. Argenti Cyanidum and Bismuthi Citras may be omitted. The silver salt is only used for the extemporaneous preparation of diluted hydrocyanic acid, but, if the bismuth compound be also omitted, a different process will be required for making bismuth and ammonium citrate. Calx Sulphurata is to be retained, but the compound from which it is prepared is to be omitted. Cinchona Rubra may be omitted or included under the general term Cinchona, so that in either case the formula for Tinctura Cinchonæ Composita must be altered. It is proposed to omit both cinnamon and cassia barks, only Saigon cinnamon being retained, so that modifications will be required in several formulæ in which those drugs are specified. Stramonium seed and its preparations are on the provisional list of omissions, but stramonium ointment, which is to be retained, is prepared from an extract now official, and that in turn is prepared from the seed, so that a difficulty suggests itself in that case. Finally, metallic zinc is to be omitted, but if that be done some different process must be devised for preparing the official solution of zinc chloride, which is now directed to be prepared from the metal. The moral pointed by the foregoing remarks is that it is necessary for pharmacopœia revisers to be able to look a long way ahead in order to avoid causing inconvenience by any alterations they may make. Even though the greatest care be taken, some point may easily be overlooked, as in the case of the 1898 B.P., which states that an aqueous solution of gum acacia forms a more or less translucent, white jelly with a solution of borax, the strength of which ought to be, but is not, stated in the appendix containing the list of official test solutions.

Errors in the B.P.

As originally published, the British Pharmacopœia, 1898, contained several errors, some of which have been corrected in reprints of the work issued at different times. But others have not yet been notified officially and, as a further reprint is about to be published, it may be useful to give a complete list of the errors so far noticed. Thus:—

Page 1, line 23; for "*solution of borax*" read "solution of *borax*."
,, 10, ,, 21; for "neutralised" read "nearly neutralised."
,, 32, ,, 24; for "18·7" read "18·0."
,, 33, ,, 17; for "4 parts" read "less than its weight."
,, 51, ,, 9; after "residue" insert "from the ethereal solution.'
,, 66, ,, 19; for "wo-celled" read "two-celled."
,, 76, ,, 34; for "*Ell.*" read "*Nuttall.*"
,, 89, ,, 28; omit "*glycerin.*"
,, 90, ,, 1; for "to the left" read "slightly to the right."
,, 200, ,, 20; for "slighty" read "slightly."
,, 229, ,, 14; omit "in 10 parts of *alcohol* (9 per cent.), and."
,, 233, ,, 15; for "*Linn.*" read "*Miller.*"
,, 237, ,, 31; for "0·0285" read "0·0283."
,, 262, ,, 14; add "unless added in excess."
,, 263, ,, 8; after "and" insert "2 to."
,, 263, ,, 21; add to formula "H_2O."
,, 266, ,, 3; omit "chlorides."
,, 266, ,, 9; for "H_2O" read "$\frac{1}{2}H_2O$."
,, 277, ,, 5; for "salts" read "sulphate."
,, 288, ,, 32; for "Tinnivelly" read "Tinnevelly."
,, 290, ,, 3; for "nigra, *Koch*" read "sinapioides, *Roth.*"
,, 290, ,, 25; for "nigra, *Koch*" read "sinapioides, *Roth.*"
,, 293, ,, 29; for "2 parts" read "1·2 parts."
,, 294, ,, 4; add "unless added in excess."
,, 297, ,, 29; for "6 parts" read "7 parts."
,, 462, ,, 6, column 4; for "1 grm." read "0·5 grm."
,, 495, ,, 12, column 3; for "5 to 10 m." read "2 to 8 m."
,, 511, ,, 35, column 1; after "Tincture of" insert "Compound."

Some readers of the *P.J.* will doubtless find that certain of the errors indicated have already been corrected in their copies of the British Pharmacopœia, but they should be careful to mark the other corrections in the foregoing list, as they may thus save themselves much trouble on some future occasion.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

SCHOOL OF PHARMACY EXAMINATIONS.

Session, 1901-1902.—Elementary Course.

PHARMACY.*

Professor HENRY G. GREENISH.

1. Describe and discuss the official method for making Liquor Sennæ Concentratus.
2. Suggest a process for preparing a syrup of Red Cinchona bark.
3. State exactly how you would proceed to prepare with a fruit basis 4 oz. of catechu lozenges, each of which shall weigh 15 grains and contain 3 grains of catechu.
4. Describe a form of drying closet suitable for pharmaceutical use, and indicate the principles upon which it is constructed.
5. Compare the precautions taken to preserve the official hypodermic injections.

PRACTICAL DISPENSING (A).*

1. Spread a strengthening plaster for application to the chest.

2. ℞ Ext. bellad. vir. .... gr. ij.
Chloral hydrat. .... gr. iij.
Ol. theobrom. .... *q.s.*
Ft. supposit. Mitte iv.
Sig. Utatur j. hora somni alterna quaque nocte.

3. ℞ Chloroformi .... ʒj.
Ol. terebinth .... ʒiv.
Pulv. saponis .... ʒss.
Aq. ad .... ℥iv.
Ft. linim. Saepe infricandum.

4. ℞ Ferri sulph. .... gr. iss.
Ext. coloc. co. .... gr. j.
Ext. aloes aq. .... gr. j.
Ft. pil. Mitte xij. Varnish.
Sumat j. hora somni bis in septimana.

5. ℞ Tinct. opii .... ♏ v.
Calomel .... gr. v.
Pt. pulv. Statim sumendus.

PRACTICAL DISPENSING (B).*

1. Spread a lead plaster for the breast.

2. ℞ Pulv. Opii .... gr. j.
Pulv. Saponis .... gr. iij.
Ol. Theobrom. .... ad gr. x.
Ft. supp. Mitte iv. Use one as directed.

3. ℞ Zinci Oxid .... ʒij.
Ol. Olivae .... ʒiv.
Aq. Calcis .... ad ℥iv.
Ft. Linimentum, dorso illinendum.

4. ℞ Creosoti .... ♏ j.
Acid Carbolic .... gr. $\frac{1}{2}$.
Ft. pil. Mitte xij. Varnished.
Capiat. j. bis die post cibos.

5. ℞ Liq. Atropin. Sulph. .... ♏ j.
Sacchari Lactis .... *q.s.*
Ft. pulvis. Mitte vj. Take one with each dose of mixture.

PRACTICAL CHEMISTRY.†

1. The strength of the solution of oxalic acid you are given is 5 grammes of the crystallised acid in a litre. (1) Determine by means of it the strength of the potassium permanganate in the bottle marked A. (2) Determine by means of the potassium permanganate the amount of ferrous iron in the bottle marked B.
2. The chalk in box A is impure; detect the impurity.
3. Analyse the powder in box B.

CHEMISTRY.*

1. How would you prove (*a*) that caustic soda was a compound substance; (*b*) that red and ordinary phosphorus consisted entirely of the same element?
2. When 30 C.c.'s of chlorine gas are acted on by a strong solution of ammonia, what volume of gas remains? By what other means can the composition of ammonia be determined?
3. What reactions occur when the following substances are heated with strong sulphuric acid:—(*a*) Oxalic acid, (*b*) charcoal, (*c*) ferrocyanide of potassium? and when water is added to the following substances:—(*d*) phosphorus pentachloride, (*e*) silicon fluoride, (*f*) calcium oxide?
4. Alcohol, acetic acid, and phenol all contain the (OH) hydroxyl group; give a short description of the properties of these substances, especially pointing out their points of similarity and difference.
5. Classify air pumps according to the principles used in their construction, and describe fully that form which you consider most serviceable in a chemical laboratory.

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* The time allowed for this paper was three hours.
† The time allowed for this paper was six hours.

6. Explain the difference between mass and weight, and between density and specific gravity. The specific gravity of glycerine is 1·25; what is its density in the English and c. g. s. systems? (1 cubic foot of water weighs 1000 ozs.)

BOTANY.*

(Not more than Four Questions are to be answered.)

1. Carefully compare the structure of a flower with that of a vegetative branch, and explain what is meant by a *typical* flower. In what ways is the structure of such a typical flower departed from in Nature?

2. Describe the development of the sporangium of the Fern. How do the spores escape at maturity?

3. What are *lenticels*? Where do they occur? Give some account of their structure and function.

4. From whence does a plant derive its energy? Give some account of the ways in which energy is made available (*a*) in the presence, (*b*) in the absence, of oxygen.

5. Starch grains are found in large numbers in the tuber of a potato. Explain as fully as you can how this is brought about.

PRACTICAL BOTANY.*

1. Make a delicate transverse section of the tissue provided. Mount it in glycerine. Sketch the appearance it presents and identify all the structures it contains, pointing them out in your sketch.

2. Identify and briefly describe the microscopic preparations A, B, C.

3. Refer the flowers D, E to their Natural Orders, giving your reasons.

MATERIA MEDICA.*

1. What is the morphological nature of the following drugs:—Cloves, Wormseed, Cola Seeds, Nutmeg, Bladderwrack, Quillaia Bark, Squill, Rhubarb, Galls, Hops?

2. Give the botanical and geographical sources, habitats and principal constituents of each of the above drugs.

3. Write a short account of Araroba.

4. By what means would you endeavour to distinguish between rhizomes and roots? Illustrate your remarks as fully as possible with examples taken from official drugs.

5. Identify the drugs shown you.

ANALYTICAL NOTES.

Quantitative Separation of Hydrochloric and Hydrocyanic Acids.—T. W. Richards and S. K. Singer describe a method of separating these two acids quantitatively, which is dependent on the difference of the degree of their ionisation. The "dissociation constant" of N/10 hydrochloric acid is about 9,000 times as great as that of hydrocyanic acid of the same concentration. Both undissociated acids are very volatile, hydrochloric acid being the more so, but ions have little or no tendency to leave an aqueous solution with steam. It is therefore possible, by evaporating a dilute solution of the mixed acids with the continual addition of water, to expel all the hydrocyanic acid without the loss of an important amount of hydrochloric acid. The best results were obtained by using an ordinary untubulated retort in which to carry out the evaporation, the neck of the retort being tilted upwards at an angle of 45°. When only small quantities of chloride are present about two hours' ebullition suffices, but if it is present in large amounts about ten hours are required. By determining the amount of silver precipitate before and after boiling, and subtracting one from the other, the amount of each acid is calculated.—*Amer. Chem. Journ.*, **27**, 205.

Detection of Albumin in Urine.—Trétrop gives the following method for the detection of albumin in urine. Four or 5 C.c. of the specimen is heated to near boiling, withdrawn from the source of heat, and treated with a few drops of formalin. In a few seconds, if albumin be present, a flocculent precipitate is formed which aggregates on the surface of the liquid and adheres to the sides of the test-tube. The urine should be fresh, since ammonia interferes with the reaction.—*Formulary of Nouv. Remèdes*, **18**.

Iodine Values of Oils.—F. W. Hunt recommends the use of a modification of the Hanus method in place of Hübl's. The solution is prepared by dissolving 6·6 Gm. of iodine in glacial acetic acid, and adding 1·5 C.c. of bromine, finally making up to 500 C.c. The solution is easily made, is considerably cheaper than Hübl's, and the results obtained are comparable with those obtained when using the latter solution. In performing the titration, 0·1 Gm. to 0·4 Gm. of oil is weighed out, and dissolved in 10 C.c. of pure chloroform, an excess of iodine solution is then run in from a burette, and the whole allowed to remain at rest for one hour. At the end of this time 10 C.c. of 10 per cent. potassium iodide is added, and the excess of iodine titrated with N/10 $Na_2S_2O_3$. Starch must be added near the end of the titration, and the whole well shaken after each addition of thiosulphate. When the colour of the starch disappears, the end of the reaction is reached. The blue colour returns, however, after even a few seconds. The titration should, therefore, be done as rapidly as possible.—*Journ. Soc. Chem. Ind.*, **21**, 454.

Detection of Albumin and Albumoses in Urine.—According to Sahli the following tests will detect and differentiate albumin and albumoses in urine. The urine is acidulated by the addition of a few drops of acetic acid, and then mixed with one-sixth of its volume of strong NaCl solution (30 per cent.). If any significant quantity of albumin be present, it is precipitated and the turbidity increases on heating. If the precipitate dissolves on warming, then albumose only is present; but if it does not, the hot liquid is filtered and the filtrate cooled. If albumose is present as well as albumin, the filtrate will show a precipitate when cold. Nucleo-albumin and resin acids also give precipitates under similar conditions. The latter are at once distinguished by their solubility in ether. Nucleo-albumin may be detected by diluting the urine with water and adding nitric acid. In its presence, a turbidity results. —*Schweiz. Woch. für Chem. und Pharm.*, **40**, 40.

LETTERS TO THE EDITOR.

Price Cutting of Proprietary Articles.

It is customary for makers of proprietary articles to protest earnestly that they do not wish for, or countenance, ruinous cutting of the prices of their articles. Are they sincere? From a list thrown in at my shop door, I learn that certain well known dietary requisites for invalids—advertised by the makers at full length inside the cover—are offered in the body of the list on terms even below the meagre profit which the proprietors think right. Although it is difficult to see in what way it serves their interest to do so, it is clear they are helping to bear the expense of making their articles unprofitable to handle. Would it be unreasonable for their other customers to call upon them to withhold their advertisements from a trade list in which their goods are cut?

Dover, June 21, 1902. J. F. Brown.

Preparation of Collodion.

I note in last week's *P.J.* that Mr. Kelley advocates on behalf of Mr. Cowie an especial claim for "the improved method of making collodion." I admit that Mr. Cowie was the first to publish the method, but the method is by no means original. It is one which suggests itself when time is not unimportant. "As a matter of fact," I have been using the improved method during the past ten years in the dispensary at St. Thomas's Hospital, and no doubt dispensers in some other institutions have been doing likewise.

London, June 22, 1902. "H. C." (140/14).

REPLIES TO CORRESPONDENTS.

QUERIES.—Scientific, technical, and general information required by readers will be furnished by the Editor as far as practicable, and as early as possible, but he cannot undertake to reply by post, even though stamped envelopes accompany the queries. All communications must be addressed, "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square. London, W.C.," accompanied by a stamped, directed envelope for reply.

Cement for Cloth (M. M.—75/20).—We regret we are unable to assist you. It is a matter for experiment.

Picric Acid (P. S. T.—75/18).—Yes, it is an explosive, but it can be kept with safety in a securely-stoppered bottle.

Winding Up a Company (F. H. R.—75/12).—We are unable to advise you on the subject. You should consult a solicitor.

Bromelin (D. H. and C.—140/15).—It is a ferment found in fresh pineapple juice. We are unable to say whether it can be procured commercially.

Marking Ink (T. K.—75/7).—You have probably not used sufficient hydrochloric acid. Add more to the precipitate and warm gently in order to effect solution.

Consumption Cure (C. H. W.—75/3).—We have no information concerning Maguire's method of curing consumption by "injecting a strong germicide and thereby sluicing the lungs."

Aluminium Salts (A. E. H.—75/4).—The salts are not poisonous, but they are not often given internally. The dose of aluminium chloride is 2 to 4 grains; aluminium and potassium (or ammonium) sulphate, 5 to 10 grains.

Chemistry of Cement, etc. (H. T. T. R.—75/16).—You will find the information you require in Thorpe's 'Dictionary of Applied Chemistry,' which you can consult in the Pharmaceutical Society's Library.

Composition of Mixture (R. B. K.—75/10).—It is said that all things are possible, but you can hardly expect us to give you a formula for a mixture of which you send a small quantity without any information regarding it.

Lime Juice (H. M.—75/19).—(1) Sulphites, salicylic acid, and alcohol are sometimes used as preservatives. (2) Salicylic and boric acids. See 'Pharmaceutical Formulas.' (3) We are not aware that there is any standard of the kind you mention.

Detection of Copper (E. W. P.—75/9).—You will find all the usual tests in Appendix III. to the British Pharmacopœia. Your difficulty is probably due to the liquid being too acid when you apply the reagents. Consult the notes on the analysis of salts, which appeared in the *P.J.* of September 11, 1897.

Saccharin Tablets (F. W. T.—75/5).—The following is Dieterich's formula:—Saccharin, 3, sodium bicarbonate, 2, and powdered mannite, 50, are thoroughly mixed and granulated by means of diluted alcohol. Another formula is that of Utz, who mixes saccharin, 30, with powdered sugar of milk, 170, and granulates the mixture with 90 per cent. alcohol. In either case the tablets must be only lightly compressed.

Chemical Balance (W. E. K.—75/15).—(1) You should procure a short beam balance of good quality by Oertling or some other first-class maker. Send particulars of your requirements to Messrs. Gallenkamp and Co., Sun Street, Finsbury Square, E.C., who will be glad to advise you. (2) Allen's 'Commercial Organic Analysis' (Churchill) is the best work on the subject, but is somewhat expensive, the cost of the complete set of volumes being about four pounds. A small work, which may serve your purpose, is Pearmain and Moor's 'Aids to the Analysis of Food and Drugs' (Baillière, 3s. 6d.).

Varnishes (T. S.—75/8).—(1) It is better to buy white hard spirit varnish of a good maker than to attempt to make it, but you might try the following:—Picked sandarac, 5 oz., is dissolved in methylated spirit, 1 pint, and Canada balsam, 2 oz., added. When solution is complete, strain through very fine muslin. Or, half of the sandarac may be replaced by mastic. (2) A black spirit varnish for straw hats may be made by dissolving black sealing-wax, 8 oz., in methylated spirit, 1 pint, thinning with more spirit if required. Or, dissolve shellac, 8 oz., and resin, 3 oz., in methylated spirit, then add vegetable or ivory black, 1 oz., and strain through coarse muslin.

Photographic Solutions (T. C. H.—75/17).—(1) Sodium hyposulphite, 2 oz.; ammonium sulphocyanide, 40 grains; lead acetate, 20 grains; gold chloride solution (1 in 60), 2 fl. drachms; distilled water, to 10 fl. oz. The solution should not be used at a higher temperature than 10° C. (2) Hydrokinone, 60 grains; metol, 20 grains; potassium carbonate, 1 oz.; sodium sulphite, 2 oz.; potassium bromide, 20 to 30 grains; distilled water, to 10 fl. oz. Add the hydrokinone and metol last, dissolving by the aid of heat if necessary, and filter. Mix the solution with an equal quantity of water before use. You will find other formulæ in the *P. J.* Photographic Supplement for March 22 last.

Ginger Ale Essence (J. P. W.—75/6).—You will find several formulæ for essence of ginger ale in the 'Year-Book of Pharmacy' for 1901, page 225. The following is one of them slightly modified, which is to be used in the proportion of 1 fl. oz. to 32 fl. oz. of syrup:—Jamaica ginger in fine powder, 8 lbs.; capsicum in fine powder, 6 oz.; alcohol, 90 per cent., *q.s.* Moisten the powders with a little of the spirit and set aside for four hours. Pack in a percolator and percolate until 8 pints have been collected. Place the percolate in a capacious bottle, add 2 fluid drachms of ginger oleo-resin, shake and add 2½ lbs. of powdered pumice stone; then add, in quantities of 16 fl. oz. at a time, 1 gallon, 3 pints, 4 fl. oz. of distilled water, shaking thoroughly after each addition. Set aside for twenty-four hours with repeated agitation. Then take lemon oil, 1½ fl. oz.; oil of rose geranium, 3 fl. drachms; oil of bergamot, 2 fl. drachms; oil of cinnamon, 3 fl. drachms, and rub down quite smooth with magnesium carbonate, 3 oz., using a little of the ginger essence for the purpose, to which 2 oz. of alcohol have been previously added. Mix and filter through a double filter, finally washing through the filter with enough water to produce a final product of 2 gallons, 3 pints, 4 fl. oz.

Corrections.

Colour of Iodine Mixture.—"Glucose" (75/11) writes to say that the first ingredient in the prescription, concerning which he sent an enquiry last week (see p. 538), should have been printed "Tinct. Iodi." The abbreviation was written indistinctly.

Spirit Duty.—Mr. Charles Umney writes to point out that our parliamentary reporter under-stated the Customs duty on imported spirits, in his notes published last week. The duty was 11s. 4d. per gallon (proof), and is now raised to 11s. 5d.

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DUNDEE REVISITED.

The meeting of the British Pharmaceutical Conference that is to be held in Dundee during the second week in August may safely be looked forward to as an event which will be no less useful and agreeable than the meeting which was held there in the autumn of 1867. On that occasion some apprehension was entertained that such a remote locality might not ensure such success as had attended the meetings at places so much more favourably situated for access as Bath, Birmingham, and Nottingham. But experience proved that those fears were unfounded, and in every respect the Dundee meeting left a red letter record that may again be equalled, but scarcely excelled. Since that time there have been vast changes in the position of chemists throughout the kingdom, which may be largely attributed to the influence of the Conference, and the second meeting in Dundee, after an interval of thirty-five years, will afford an interesting opportunity for considering how far those changes have been advantageous or the reverse, and how far the efforts to improve the position of chemists have succeeded, or have fallen short of the desired results. In one respect the comparison is satisfactory, since chemists are now a legally recognised body, and the necessity for their qualification being enforced by legislative authority, as recorded in the report of the executive committee of the Conference in 1867, has been provided for. The useful influence of the Conference in promoting local organisation has also been manifested, by the foundation of the Dundee Chemists' and Druggists' Association shortly after the Conference meeting and of many other associations at the various places it has since visited. The address that was delivered by Mr. Russell as President, at the inauguration of the Dundee Association, is of great interest in this connection because it gives an account of his observations as to the condition of the drug trade in Scotland during the early part of last century, while it also serves to show that great as the progress had been then it has been far greater since that time.

But together with the improvements effected by legislative incorporation of chemists, other conditions have arisen to counterbalance, more or less, their advantages. The increase of competition in trade has brought into existence not only the drug store, but also the still more objectionable company drug store by which the business of the chemist is reduced almost entirely to the level of distributing packed goods, and the art of pharmacy is becoming for many, so engaged, a negligible quantity. Under such conditions the inefficiency of compulsory examination to ensure the sound education desirable for the pharmacist has become painfully apparent, as well as the want of rational connection between the prescribed scientific qualifications of the registered chemist and the kind of business which very many candidates for legal qualification intend to carry on. Closely connected with that state of affairs is the desire for a division of the qualifying examination, by which passing might perhaps be made easier, but also become a less adequate test of the practical knowledge possession of which is necessary for the practice of pharmacy. In short, experience has demonstrated that the existing legislative machinery is so little adapted to prevailing conditions that its amendment is as urgently required now as statutory regulation of the chemist's business was in 1867.

The interests involved in amendment of the law are various; but in any legislative action regard for public interest would prevail as to restriction of trade as well as the protection of qualified chemists. The question as to how those somewhat antagonistic interests are best to be provided for is an important one for chemists to consider at the present time, and the Conference at Dundee offers a convenient opportunity for its discussion with a view to the consolidation of chemists' interests which are not without some incongruous and conflicting elements. Though such subjects have not generally been brought within the scope of Conference proceedings, the former meeting at Dundee established a precedent for doing so, and the action then taken with regard to the sale of quinine wine, as a medicine, by chemists was attended with such satisfactory results that a similar extension of the subject matter dealt with at such a function as a chemists' conference would not be an inappropriate adaptation to modern requirements. The need for organised co-operation, which has always been acknowledged, was never a more pressing want than at the present moment, and, with judicious management, it might be possible to give further effect to the views of Schacht, Reynolds, and Brady by making provincial meetings of the Pharmaceutical Society the nucleus of an annual Chemists' Conference.

ANNOTATIONS.

The Illness of the King, close on the eve of his Coronation, has been followed by the cancelling of all the arrangements which had been made to celebrate that event, and, though Thursday and Friday remain Bank Holidays in accordance with the terms of the proclamation, most places of business are remaining open as usual. The Secretary of the Pharmaceutical Society has intimated that the Society's premises will not be closed on June 26, 27, and 28, as announced last week, and the *Pharmaceutical Journal* goes to press on the usual day. It is satisfactory to learn that the operation on the King has been successfully performed, and that His Majesty continues to make progress towards recovery; but his condition is evidently very serious, and all our readers will doubtless join in the heartfelt cry—

God Save the King!

Slanders Against the Pharmaceutical Society, because of its fancied misdeeds, continue to occupy the pages of provincial newspapers, the conductors of which ought to be better informed by this time than to give credence to fanciful tales. The latest offender in that respect is the *Manchester Daily Dispatch*, which begins a note on the sale of poisons with a statement that, much as the efforts of the Pharmaceutical Society may be needed to prevent the reckless sale of poisonous compounds, it seems probable that in its "recent crusade" against certain shopkeepers, it is pushing its powers too far. It is further stated that it would be a pity, if by unwise use of its right to prosecute in certain cases, the Society should raise such opposition as would lead to an alteration of the law in the direction of laxity. That is well put, but it has yet to be shown that the Society has made any unwise use of its right to prosecute in certain cases. It is quite beside the question to allege that it was not the intention of the Legislature to take away from a large body of traders the right to sell poisonous articles used for trade purposes, or to suggest that the Society was responsible for the fact that a short time ago a dealer in paints and colours was prosecuted for selling emerald green. There is no law in existence which will prevent paint and colour shops being conducted except by qualified chemists, and it is a great pity that any journalist should waste his time by stating that "deadly poisons enter into the composition of these articles in all directions, and if nothing can be sold which contains one or more of the scheduled poisons, it is clear that a whole trade will be ruined and handed over to the pharmaceutical chemist."

The Pharmaceutical Society of Ireland has failed to satisfy Mr. Swifte (see *ante*, p. 543) that the business of a deceased pharmaceutical chemist can only be carried on, in accordance with Section 32 of the Irish Pharmacy Act, by the deceased's immediate representative. In delivering his decision, on June 20, Mr. Swifte dealt at length with the law on the subject (see p. 564) and held in favour of the contention, on the part of defendants, that executors and administrators are empowered to carry on such business after the death of the original owner, without limit as to the time imposed on them, the expiration of which would change a lawful act into an unlawful one. He pointed out that, under the Licensing Acts, a specific time limit governs similar cases, but in the Pharmacy Act the section relied on does not specify any time. He, therefore, dismissed the summons.

The Unrestricted Sale of Poisons is the subject of a note in the *Lancet*, which begins with the statement that it is difficult to suggest a satisfactory system of control by which all poisons or poisonous preparations can be sold. It is pointed out that tobacco, paint, and alcohol are poisons, but there is practically no limit to their sale, and it is said to be pretty evident that the provisions of the Pharmacy Act were never intended to apply to such preparations as weed-killers or insecticides, the sale of which does not appear to require the offices of a particularly well-educated or qualified person, such as is the chemist and druggist, who is required to possess an accurate knowledge of poisons for obvious reasons, chief amongst which is that he dispenses them for internal administration. Reference is then made to a recent case in which a seed and artificial manure merchant was fined for selling a "vaporising fumigator" containing nicotine, without having his name and address on the bottle, also for selling the poison to an unknown person, and for failing to make an entry of the sale in a book kept for the purpose, contrary to the provisions of the Pharmacy Act, 1868. The preparation was sold and used for the destruction of greenhouse pests, and evidence was given (see *P.J. ante*, p. 543) to the effect that the compound contained over 20 per cent. of nicotine, two ounces containing as much as 188 grains of the alkaloid. The *Lancet*, whilst admitting the danger to the community which attends the unrestricted sale of poisonous compounds, hopes that the Privy Council Poisons Committee may find that it is possible to control the sale of poisons in some way which, while duly protecting the public, will not threaten to extinguish the trade in poisonous compounds intended exclusively for agricultural purposes. It is reported, by the way, that the members of the Poisons Committee have now been furnished with a *précis* of all the evidence taken, but, although the report of the Committee may be presented to Parliament in the course of the autumn, there is no probability of legislation on the subject being initiated until next session.

The Sale of Scheduled Poisons by medical practitioners is permitted by the law, but the sale must not be delegated to unqualified persons. In a report presented to the Glasgow Faculty of Physicians and Surgeons by their legal adviser, Dr. Hill, it is further laid down that, while it is quite legal for a practitioner's wife or maid-servant to dispense a prescription containing a scheduled poison, the medicine containing such poison can legally be handed over to the patient or his representative only by the medical man himself. If this be good law, observes the *Medical Press*, it introduces an element of embarrassment into dispensing medical practice, at any rate in Scotland. It is reported that quite a number of open surgeries have been closed, and others, it is apprehended, will follow suit. However disagreeable this may be to the proprietors, there will, the *Medical Press* thinks, be little difference of opinion as to the social advantage which will accrue to the profession by the elimination of this trading element.

Dr. J. Norman Collie, F.R.S., Professor of Chemistry to the Pharmaceutical Society of Great Britain, has been appointed Professor of Organic Chemistry at University College, by the Senate of the University of London. The position, which is a newly-created one, is understood to carry with it a salary of £1,000 per annum. The appointment has been made in connection with the grant of £10,000 per annum recently voted to the University of London by the London County Council, in aid of the work of the faculties of arts, sciences, engineering, and economics.

Black-water Fever is referred to in a report on the trade of German East Africa, by Mr. Vice-Consul Dundas, who remarks that much has been conjectured in regard to the fever, and while some British doctors argue one way and others another, there is but one opinion prevalent in East Africa in respect to the malady. He says the opinion, based on thorough and careful experiments, is that quinine causes the fever, but certain conditions must prevail in a person before this effect takes place. "In some people that condition exists very often, witness the number of times a person has been known to have black-water fever. In others, again, that condition does not seem to exist, or else has worn off at the time of approaching illness. In consequence of this opinion, quinine is now used with every precaution, and a great reduction is now noticeable in the cases of black-water fever and deaths therefrom, and this result is a reasonable ground to work on." Commenting on the foregoing statements, a correspondent of the *Standard* speaks of them as misleading, and calculated to do a great deal of harm. He points to the fact that many cases have been recorded where black-water fever has occurred in people who have not taken quinine, also that in many parts of the world where malaria exists, quinine has for a long time been used as freely as, if not more freely than, in countries where black-water fever exists, and yet without producing the disease. This is notably the case in the greater part of India. After the disease has developed thoroughly, quinine has been used in its treatment, and yet, in the majority of cases, the results have been good, and the special symptoms have not been aggravated. In conclusion, he states that there is still much to be learnt about black-water fever; but in face of the above statements he hopes that responsible persons will pause before they discredit in any way the use of quinine.

The Dispensing of Medicines by Medical Men does not apparently commend itself to the Sheffield Guardians, as a Committee of that body, which has had under consideration the revision of the medical officers' districts, rendered necessary by the extension of the city boundaries, has reported that it is desirable, as far as possible, to do away with the plan of any district medical officer being required to provide his own medicines, and that recommendation has been adopted by the Guardians. In order to facilitate the change, it is intended that a branch dispensary should be established at the Attercliffe Vestry Hall or some other convenient place, to provide especially for the present and proposed districts of Attercliffe, Darnall, Carbrook, Brightside, and Grimesthorpe. With reference to the new Hillsborough district, arrangements are to be made with a chemist in that district to supply medicines on the prescription of the district medical officer, on a scale as to payment to be agreed upon. One of the Guardians pointed out that some of the drugs which had to be prescribed were very expensive, and it was a question if the doctors were sufficiently paid, but if they were not required to provide their own medicines they would be able to prescribe solely in the interests of their patients. Mr. Newsholme, President of the Pharmaceutical Society, who is one of the Sheffield Guardians, also spoke on the subject, explaining that the establishment of branch dispensaries would do away with the hardship which many people had suffered in having to go a long distance for their medicines.

The Knowledge of Pharmacy possessed by the average medical practitioner is very slight, but a correspondent of the *Lancet* appeared recently to suggest that the subject should be omitted from the medical students' curriculum, his reason being that, "beyond what can be learned in a couple of hours about this subject in these days of manufacturing chemists, nothing is practically left for a medical man to do in the way of dispensing." But even if a medical man wisely decides to do nothing in the way of dispensing, it is surely desirable that he should know something more about pharmacy than manufacturing chemists are likely to tell him? That point is emphasised by another correspondent of the *Lancet*, who protests against the statement that all that is worth knowing about pharmacy can be gathered in a couple of hours' study. As he says, anyone who attempts to prescribe with intelligence must be aware how difficult it is to combine neatly and effectually even those few drugs which are most commonly employed, and it seems somewhat humiliating for a medical man to be dependent on the word of a manufacturing chemist with regard to what is the proper combination to be employed in any particular case. The fact that medical practitioners know so little about pharmacy nowadays explains the great decline in the art of prescribing, and it may yet come to pass that pharmacists, in self-defence, will find it necessary to instruct medical men how to prescribe.

Mr. Glyn-Jones is to be congratulated on the decision (see p. 563) of the point raised by him as to medicines, which are "known, admitted and approved of" as remedies, being exempt from liability to the stamp duty chargeable on proprietary medicines which are either secret, or patented, or recommended by their individual proprietors. Mr. Dennis, the counsel for the Inland Revenue Department, strenuously urged his view that recommendation of medicine, as a remedy, by any person selling it would make that medicine liable to stamp duty, and, of course, the seller of it chargeable with licence duty. But his arguments, as to the term "original or first vendor" being applicable to other persons than the individual proprietors of particular nostrums, failed to convince the magistrate that such possible applications were within the meaning of the Act, and his decision supported the simple common-sense view that the elaborate provisions of the Act, discriminating between two different classes of medicines as well as between different sellers of them and making one class chargeable with duty, while exempting the other, would be little better than a sham if the exempting provisions did not exempt any kind of medicine or enable any sellers of "known, admitted, and approved" medicines to furnish information as to the purposes to which they are applicable as remedies. Consequently, recommendation that does not involve proprietary claim is the particular thing exempted, for that is, in fact, the only thing to which the language of the exemption can be made to apply. So far, therefore, important progress has at last been made towards a rational interpretation of the Medicine Stamp Acts.

The Showers of Pollen which have been mistaken for sulphur by observers in different parts of the country, who assumed that the supposed sulphur had its origin in the recent volcanic eruption in the West Indies, are referred to by the *Lancet*, in a note which states that it is open to doubt whether the yellow deposit was due to sulphur at all, the probability being that it is the pollen of certain conifers. Assuming, however, that free sulphur was present, its origin could not have been the dust showers of the West Indies eruption, for a recent analysis of the deposit collected from the deck of the steamer "Roddam" shows no free sulphur at all, but chiefly the silicates of alumina, iron, calcium, and magnesia. The only sulphur found was present as sulphate, and then only to the extent of less than 1 per cent. The analysis, in short, shows that the dust possessed the composition of crude pumice.

POISONING CASES.

Seventeen deaths by poisoning have been reported since June 18—nine accidental cases and eight suicides—thus:—

Poison.	Accident.	Suicide.
Carbolic Acid	1	1
Chloral Hydrate	1	—
Chloroform	2	1
Ether	1	—
Foot Rot Mixture	—	1
Hydrochloric Acid	—	1
Laudanum	3	—
Nitric Acid	—	1
Oxalic Acid	—	1
Potassium Bichromate	1	—
Salt of Lemons	—	1
Other Poison		1

Carbolic Acid caused the death of a man employed by the Hammersmith Borough Council, who was carrying a bottle containing the poison in his pocket; the bottle broke and the man's leg was severely burned by the acid, death being the result of the burns. The same poison was taken by a woman at Birkby.

Chloral Hydrate caused the death of a young gentleman at Swanage, who inadvertently took an overdose of the drug. He had been in the habit of taking chloral, and had received a bottle containing two ounces by post, but there was no label on the bottle to indicate who had supplied it.

Chloroform administered as an anæsthetic caused the death of a sailor at Liverpool and of a carter at Redlynch, near Salisbury; a medical man at Hastings also died from the effects of taking chloroform.

Ether used as an anæsthetic caused the death of a bricklayer at Croydon.

Foot-Rot Mixture was taken by a farmer at Hatton, near Church Stretton.

Hydrochloric Acid was taken by a Bermondsey dyer, who had sustained an injury to his skull as the result of an attack by roughs.

Laudanum was inadvertently taken in excessive quantity by a shipyard labourer at Sunderland; also by a Leeds man and by a solicitor's clerk at Bexhill.

Nitric Acid was purposely taken by the wife of a Liverpool printer.

Oxalic Acid caused the death of a Leigh dairyman, who committed suicide.

Potassium Bichromate, used for battery purposes, caused the death of an infant girl at Loughborough Junction, who appears to have swallowed some crystals found upon the floor.

Salt of Lemons was taken purposely by a widow at Woolstanton.

Other Poison.—A professor of foreign languages at Malvern College committed suicide by taking some poison unnamed.

Non-Fatal Cases.—The poisons used by would-be suicides during the past week included ammonia, carbolic acid (three cases), disinfectant solution, oxalic acid, phosphorus, strychnine, and a photographic toning solution. The carbolic acid cases occurred at Cardiff, all three persons who took that poison being charged before the magistrates on the same day.

PRACTICAL NOTES AND FORMULÆ.

Typewriter Inks.

(1) Aniline dye, soluble in oil, 2 parts; carbolic acid, 2 parts; castor oil, 2 parts; oil of cassia, 1 part. (2) An aqueous ink can be made by grinding aniline dye, soluble in water, sufficient according to colour, with acetic acid, ½ oz.; distilled water, 1½ oz.; glycerin, 4 oz.; alcohol (90 per cent.), 4 oz.—*Pitman's Phonetic Journal.*

Incompatibility of Borax and Cocaine.

Demandre finds that the precipitation of cocaine hydrochloride solutions by borax may be obviated by dissolving the latter salt in glycerin before adding it to the cocaine solution, and that the precipitate formed on mixing aqueous solutions of the two salts may be redissolved by the addition of glycerin. —*Journ. de Pharm. d'Anvers*, **58**, 130.

Phosphorised Oil.

K. Dieterich recommends saturating phosphorised oil with CO_2 as a method of preventing the oxidation of the phosphorus. He has found that oil thus treated maintains its full percentage of unoxidised phosphorus for six months, while another portion not so treated had lost 50 per cent. of the active ingredient.—*Journ. Pharm. d'Anvers*, **58**, 5[illegible]; after *Pharm. Post.*

Boric Acid and Hydrogen Peroxide.

The addition of 3 per cent. of boric acid to hydrogen peroxide, instead of the mineral acids usually employed as preservatives in the commercial article, is recommended by L. Delaye as being quite as effective and not having the same disadvantages, such as causing irritation. Commercial hydrogen peroxide is neutralised with soda, using phenol-phthalein as the indicator, and the prescribed amount of boric acid dissolved in the neutral liquid. Twelve volume hydrogen peroxide thus prepared may be used, without dilution, as a mouth-wash, and may be retained for some time in the mouth without giving rise to the least discomfort. It is almost tasteless. He advocates the titration of the peroxide by means of permanganate in the presence of free hydrochloric acid. A standard solution of $KMnO_4$ is prepared containing 5·659 Gm. per litre. One C.c. of the peroxide to be tested is diluted with 10-15 C.c. of distilled water, and acidulated with 5 C.c. of HCl. The permanganate is then run in, from a burette, drop by drop, until a permanent rose colour is obtained. Each C.c. thus used up is equivalent to one volume of available oxygen.—*L'Union Pharm.*, **42**, 529.

LEGAL INTELLIGENCE.

Medicine Stamp Duty Acts.

Ammoniated Tincture of Quinine, B.P.

At the Thames Police Court, before Mr. Dickinson, on June 25, the third and final hearing of the case against Mr. W. S. Glyn-Jones (see *Pharmaceutical Journal*, June 14, page 523) was heard. Mr. Dennis again appeared for the Revenue authorities, and Mr. C. H. Kirby defended.

The Magistrate asked whether the defence were prepared with any evidence that the wholesale dealers who had supplied the preparation to the defendant had not recommended it. Mr. Kirby replied that he had no further evidence to offer on that point. Mr. Dickinson said it would restrict the case to the particular bottle sold, while the chief point was whether a chemist could sell any article under similar circumstances; it was an interesting point, and one which he would like to see settled.

Mr. Glyn-Jones was recalled, and added that he knew the firm of Gale and Co., who issued a price list, but they had never, to his knowledge, recommended ammoniated quinine to the public.

Mr. Dennis, cross-examined, showing that this statement was merely negative.

Mr. Kirby offered to put in the box the editors of the *Pharmaceutical Journal* and the *Chemist and Druggist*, but the magistrate replied that they could not go further than Mr. Glyn-Jones, and that he must confine the case to that particular bottle, and not to ammoniated quinine generally.

Mr. Dennis, in reviewing the case for the prosecution, said he would deal with the meaning of the term "owners and proprietors," the term "original or first vendors," and, lastly, with the benefits which chemists would derive from this exemption if his construction was correct. There was the "owner" in the sense of being the proprietor of a right in making ammoniated quinine which would preclude anyone else making it, and the "owner" in a legal sense: proprietorship in a particular article. The first part of the exemption, he continued, described the medicines to be exempted, and excluded those respecting which any person claimed the exclusive right of making, and later, excluded any particular packet the legal owner of which had recommended it. The words "owner or proprietor" were used in this sense in Sec. 3, 42, Geo. 3, C. 56, where the owner of the packet had to pay duty before the article should be first sold; the owner was, therefore, the legal owner of the article. Sec. 2 also used the words in the same sense. Sec. 2 of 43 Geo. 3, C. 73, also showed that the "owner" was the owner at the time being. The original or first vendor who recommended was also excluded from the exemption. Analysing the term "first vendor," Mr. Dennis reiterated the theory that this was the person who first sold the article liable to duty. If Mr. Glyn-Jones were not a chemist, and had put on this label, then Messrs. Gale would, under Sec. 3 of 43 Geo. 3, C. 73, be liable; that was, if the contention of the defence was right that Gale were the original or first vendors. The construction of the Act could not possibly mean this, and, therefore, the defendant was liable. If the original or first vendor meant the wholesale house, then they would be liable as first vendors if someone else afterwards recommended it. Dealing with the advantages the chemist gained under his construction of the exempting clause, Mr. Dennis stated that the exemption applied to articles in the Schedule which were liable, whether recommended or not, and included a large number which were not proprietary medicines in any way.

The Magistrate here differed from Mr. Dennis, arguing that the articles in the Schedule must at one time have been connected with some specific complaint. He instanced the word "tabloid," which, on the face of it, might be a word that anyone could apply, but which was a registered trade mark applying to certain medicines made by one firm.

Mr. Dennis, resuming, mentioned "Henry's Magnesia," which was the light magnesia of the British Pharmacopœia. No one but a chemist could, therefore, sell light magnesia without stamping it. If he recommended it, then the article must be stamped, and it was in reference to articles of this character that chemists benefited under the exemption. The same thing, he said, applied to ginger lozenges, which a chemist could sell as a medicine provided he did not recommend them.

At this point Mr. Alfred Stonnor gave evidence on behalf of Messrs. Gale and Co., showing that his house had never claimed proprietary rights for ammoniated quinine, and had never advertised or recommended it for the cure of influenza.

Mr. Dennis cross-examined to show that Messrs. Gale were not the first firm who had sold ammoniated quinine. The witness, however, denied that it was included amongst other articles which they did recommend.

Mr. Dickinson, in giving his decision, said that liability was undoubtedly incurred under the Acts 44 Geo. 3, Cap. 98, and 52 Geo. 3, Cap. 150, which imposed a duty on articles mentioned in the schedule, and also all other pills, powders, etc., as given in the General Charge of Duty. But there were certain exemptions which the defendant came under. (1) The preparation was sold by a chemist or expert. (2) The composition of the preparation was well known and approved of in certain complaints. (3) No occult or secret art for mixing was claimed. (4) No exclusive right or title to making was claimed. (5) It was not a patent. The only question was, was it recommended by the original or first vendor? He could see no difference between the two terms; was the defendant the first vendor? Mr. Dennis had said that there were three meanings to this term (1) the originator of the preparation; (2) the person who sold it wholesale, and (3) the person who first sold to the public. Mr. Dennis claimed that the last was the proper construction. He, however, was satisfied that the first vendor in this instance did not recommend the article. Anyone could sell mixed drugs By the exemption chemists were regarded as privileged, but if Mr. Dennis was correct the chemist had no advantage. If the first person selling the article did not recommend it, then chemists were not liable to duty; but if, by recommending, a chemist became the first vendor, no chemist could ever sell with a recommendation. He would, therefore, find for the defendant and dismiss the summons.

The Magistrate subsequently intimated that he would grant a case upon the findings, and in order to save expense, should his decision be upset, he stated that the penalty he would impose would be a 1s. fine and 2s. costs. Having given this decision the High Court would not then send the case back, and it would save expense.

Alleged Recommendation on Label.

It will be remembered that on March 24 last, Mr. F. Sanguinetti, 120, Uxbridge Road, Ealing, W., was summoned under the Medicine Stamp Duty Acts (see *P.J. ante*, p. 260) by the Inland Revenue authorities for the use of the following label without a stamp: "Pure Gum Pastilles. Influenza. Delightfully Soothing to Singers and Public Speakers." The magistrates, who dismissed the summons, subsequently declined to state a case for the High Court unless Somerset House undertook that further proceedings should be without expense to Mr. Sanguinetti. The case was further heard in the Lord Chief Justices' Court on June 23, before the Lord Chief Justice and Justices Channell and Darling, when Sir Edward Carson, the Solicitor-General, asked that the rule nisi, directing the Brentford justices to show cause why they should not state a case should be made absolute.

The magistrates in their statement declared that, in their opinion, no point of law was involved and that the application was frivolous.

The Solicitor-General admitted that, if the justices were of opinion that the point raised was merely frivolous, they were entitled to refuse to state a case, but he submitted they had not shown that no important point of law was raised. He also pointed out that (although this was not stated to the justices at the time of making the application) the Attorney-General had power to order the magistrates to state a case without application to the High Court if he thought fit to do so.

The Court granted the application, making absolute the rule nisi.

Pharmacy Act (Ireland), 1875.

Action Against Executors.

In the Southern Police Court, Dublin, on Friday, the 20th inst., Mr. Swifte gave his judgment in the case, which had been heard on a former day, in which Mrs. Josephine Preston and Mrs. Margaret McDermott were summoned by the Pharmaceutical Society of Ireland for having, on February 11 of the present year, kept open shop for the compounding of medical prescriptions, and compounded a medical prescription for F. W. Leslie, contrary to Sections 30 and 32 of the Irish Pharmacy Act of 1875.

At the hearing the Society were represented by Mr. R. K. Clay, solicitor (Messrs. Casey and Clay), and Mr. Ignatius O'Brien, K.C., instructed by Messrs. J. L. Scallan and Co., solicitors, appeared for the defendants.

Mr. Swifte said an important point of law not previously decided had been raised in the case. The facts had been admitted, and were, shortly, as follows:—Mr. W. H. Bowers, a qualified pharmaceutical chemist, carried on business at 164, Great Brunswick Street, Dublin, up to the date of his death, intestate, on June 29, 1895. He was a bachelor, and his father being deceased, his mother, Mrs. Margaret Bowers, on September 10, 1895, took out a limited administration to her son, the gross value of whose personal estate was £4,657 8s. 1d. Under Section 32 of the Irish Act of 1875, Mrs. Bowers carried on business without objection on the part of the Society, she always keeping a duly qualified pharmaceutical assistant on the premises. She died on January 22 last, and on April 1 following letters of administration for the unadministered personal estate of Mr. Bowers were granted to his sister, Mrs. Josephine Preston, defendant in the case. The gross value of the unadministered personalty then amounted to £2,078. Mrs. Preston and her sister, the defendant Mrs. McDermott, had since carried on the business, claiming the right to do so, as they kept a qualified pharmaceutical assistant on the premises. Section 32 of the Act of 1875 was as follows: "Upon the decease of any person registered under this Act as a pharmaceutical chemist actually in business at the time of his death, it shall be lawful for any executors, administrator, or trustee of the estate of such pharmaceutical chemist to continue such business, if and so long as such business shall be *bonâ fide* conducted by a duly qualified assistant, and a duly qualified assistant within the meaning of this section shall be a pharmaceutical chemist registered as such under this Act." Mr. Clay had contended that that section could not have been intended to authorise the carrying on of a business such as that in question by an unlimited succession of persons *ad infinitum*, but that only the immediate representative of the deceased could carry it on or have an opportunity of disposing of it. Mr. O'Brien, on the other hand, contended that the section did not lay down any limit of time, and that the policy of the Act, which is to protect the public from medicines being compounded and poisons sold by unqualified persons, was adequately carried out by the safeguard which the section provided of securing the service of a qualified assistant. In support of that view he cited a passage from the judgment of Lord Chancellor Selborne in the House of Lords in the well-known case of the Pharmaceutical Society of Great Britain *v.* The London and Provincial Supply Association, Limited, decided in 1880, and reported in Law Reports 5th, House of Lords cases, pages 857. The question there was, shortly, whether a limited liability company or corporation was a "person" within the meaning of Section 1 of the English Act of 1868, corresponding to Section 30 of the Irish Act of 1875, and therefore incompetent to make up or sell medical prescriptions, unless registered as a pharmaceutical chemist The House of Lords held that a corporation was not such a "person," and that therefore they might carry on such a business without being so registered, but that the actual seller of the medical prescription must be a qualified person. The passage of the judgment of Lord Selborne relied on by Mr. O'Brien, in which the Lord Chancellor referred to Section 16 of the English Act representing Section 32 of the Irish Act, was as follows:—"You do find in the Act, in the 16th Section, a special provision for individuals carrying on that kind of business who might die, and whose executors or trustees, not being themselves qualified, might desire to carry it on after their deaths. It is true that the Legislature has in that case required for the benefit of the public this safeguard, that there shall be an assistant duly qualified; but the Legislature shows that, having that case in view, it was not thought necessarily inconsistent with the object of the policy of the Act that the principals or proprietors of the business—the persons deriving profit from it—to whom those actually selling the drugs would be responsible, might be unqualified persons, provided that there was in the business a duly qualified assistant. It by no means follows that all the drugs would necessarily be sold by that duly qualified assistant, or that he might not be, as in this case, under the general superintendence of a manager not himself qualified; all that is left open. It is at least not thought indispensable that the persons carrying on every such business should themselves, without exception, be qualified." The principles enunciated in that passage of a judgment of the highest authority seemed to him (Mr. Swifte) applicable to the present case, which was even an *a fortiori* one, because, whilst that case decided that a corporation, which, in the eyes of the law, has a perpetual existence, may work a pharmacy in perpetuity through charge of qualified assistants, there would always be some limit of time, though a protracted one in the case of an ordinary executorship administration or trusteeship. On the face of it, the section they were now dealing with laid down no limit of time for its application; the only condition emphatically insisted on was that the business should be *bonâ fide* conducted by a duly qualified assistant. If the Legislature had intended to lay down a hard and fast limit, such as a year, from the death of the deceased, or, as Mr. Clay suggested, the lifetime of the immediate representative of the deceased, would it not have been easy for them to have said so, as they had done in analogous instances under the Liquor Licensing Laws? Section 1 of the Transfer of Licences (Ireland) Act, 1855, of the 18th and 19th Victoria enabled justices of the peace at sessions to transfer to any person not legally disqualified a licence to carry on the business of a vintner on the death or removal of the previous licencee, and enacted that it should be lawful for the transferee until the quarter sessions next, after the expiration of a calendar month from the time of such transfer and no longer. Again, Section 3 of the Licensing Act of 1872 gave an immunity from penalties for selling to the heirs, executors, administrators, and assignees of deceased licensed persons up to the next ensuing special sessions. In both of these instances a rigid and easily ascertainable limit of time was enacted during which the business might be carried on by the representative of the person. Accordingly, the absence of any such limit of time in the Section of the Act under consideration suggested forcibly that it was not intended by the Legislature to fix one so long as the representative or trustee observed the condition that was laid down of keeping a qualified pharmacist as an assistant. But supposing that Mr. Clay was right in contending that some limit should be laid down so that a system of trading which he argued to be *prima facie* only sanctioned for the purposes of temporary convenience should not go on indefinitely, what would be the most reasonable limit? He (Mr. Swifte) hardly thought that the lifetime of the executor, administrator, or trustee, or of the survivors of them, if more than one, would be a satisfactory suggestion. If there were only a sole representative he might die almost immediately after the deceased person, and then the whole business must collapse. In that case, according to Mr. Clay's contention, it would not be lawful to carry on the business, even for a few months, so as to sell it as a going concern. What was the general law on the subject of a deceased trader's business? It was accurately stated at page 1,815 of 'Williams on Executors' as follows:—"When a trader dies, obviously his trade or business descends to his executors or administrators, as part of his assets. It is equally obvious that his trade or business must be either wound up or realised by his executors or administrators, or be carried on by them. The carrying on of the trade or business, too, may be either merely for the purpose of realisation, or it may be continued for the purpose of making a profit. In carrying on the trade or business of the deceased for either of the above purposes the following persons may be affected by the success or failure of the trading:—(a) Creditors of the deceased; (b) beneficiaries under his will; (c) creditors whose debts are incurred in the trading subsequent to the death of the deceased. It is the duty of both an executor and an administrator, when the business of the deceased is a valuable asset, to carry on the business for such reasonable time as may be necessary to enable them to sell it as a going concern; but the executor or administrator who carries on the business of his testator makes himself personally liable for all debts so contracted, and it makes no difference that he avowedly acts as executor or administrator. Where the business is merely carried on for the purpose of realisation, the executor or administrator is entitled to be indemnified by the estate against all liabilities properly incurred by him in so doing, both as against creditors of the deceased, and also as against beneficiaries. An administrator is only entitled to carry on the business of an intestate for the purpose of realisation, and if he does any more than this he renders himself personally liable for the debts so incurred without any right of indemnity out of the intestate's estate; and any assets acquired in such trading belong to the intestate's estate, subject to the rights of the administrator to be indemnified for what he has expended in obtaining such assets." So far as those principles were applicable to the present case, they went to show that as against creditors and parties entitled under the Statute of Distribution in the intestacy of the late Mr. Bowers, his mother was entitled to carry on the business for such a reasonable time as would enable her to sell it as a going concern, and that in carrying it on beyond that time she would be doing so at her own peril. What would be such a "reasonable time" might vary, according to the circumstances of each case. Where there was a will, the executor was given a year; and the English Statute of Distributions laid down in Section 8 a similar rule as to the residue in cases of intestacy. ('William on Executors,' p. 1401.) Section 4 of the corresponding Irish Statute was to the same effect. A year might, therefore, perhaps be regarded as the minimum reasonable time in the present case for completing the sale of the business as a going concern. On the other hand, in the modern leading case as to the power of executors, of Dowse *v.* Gorton (Appeal Cases), Lord Herschell, in the House of Lords, laid down that three years would be too long. At page 199 he said that in that case the business was carried on for a period of three years, and that that had not been done for the purpose of effecting a sale. Again, in the very recent Dublin case of Hodges *v.* Hodges (1st Irish Reports), in which it was sought to administer the estate of a well-known ironmonger, the Master of the Rolls considered that a little over two years was more than a reasonable time. He said, at page 488 of the report:—"The dates in the present case are important. The testator died in September, 1895. The proceedings were not begun for more than two years afterwards. There is nothing to justify me in inferring that the business was carried on for this length of time for the purpose of selling as a going concern. No attempt was made during those two years to sell the business, and could anyone suppose that the shop was kept open simply to sell as a going concern?" He (Mr. Swifte) gathered from these authorities that perhaps something between one and two years was the average reasonable time for effecting the sale of a going concern. According to Mr. Clay's contention, that time would have been cut down to some three months if Mrs. Bowers had died within a week after she obtained administration to her son. Surely in creating an offence there should be some precision as to the time when a legal act became illegal. For the purposes of the argument, he had treated the case as one of unpaid creditors and beneficiaries. As a matter of fact, the intestate's estate seemed to have been thoroughly solvent, the gross assets having amounted to some £4,650, whilst the debts, funeral expenses, and other deductions came to less than £400. He had no information as to whether Mr. Bowers left any brother, or any other sister than the two defendants, or whether they were of age at the time of his death. At any rate, some valid family consent was necessary to the business being carried on as it had been. Mrs. Bowers was described in the administration as the sole next-of-kin of her deceased son, but her children were entitled to equal shares with her *per capita* of the net assets of the deceased. He had not been informed of the precise position of the defendant, Mrs. McDermott, in the establishment, but he gathered that it was not intended to press the case against her. That relieved him from the necessity of considering what would be the position of a person who was not qualified as a personal representative of a deceased pharmacist, but who was associated in the carrying on of his business, even with a qualified assistant. It had been stated at the Bar that the parties had agreed to treat the grant of administration *de bonis non* as relating back to the date of the offence charged—namely, February 11. At that time there was no personal representative of the deceased in existence to satisfy the provisions of Section 32. Instances of grants of administration relating back to the death of an intestate were to be found in 'Williams on Executors,' but he did not think the principle could be applied to the present case. It seemed to him that, except for the agreement so made between the parties, he should have had to convict the defendants because they had no letters of administration. As it was for the various reasons he had mentioned, he dismissed the summons, and as the case had been brought forward amicably as a test one, he would say nothing about costs.

Mr. Clay said they were greatly indebted to his worship for the trouble he had taken in the matter. Of course, he should have to submit his worship's judgment to the Council of the Society. Mr. Scallan and himself had agreed that the question was one of principle, and that they would not rely on technicalities.

Mr. Scallan said he acquiesced in his worship's decision.

Mr Swifte: It is a case having very important bearings

Mr. Clay: We wanted to know what we are to do in future.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

Meeting of North British Branch Executive.

A meeting of the Executive of the North British Branch was held in the Society's House, 36, York Place, Edinburgh, on Friday, June 20, at 10.30 a.m., Mr. **Peter Boa** in the chair.

Present: Messrs. Boa, Currie, Doig, Dunlop, Fisher, Henry, Kerr, Naysmith, Spence, Storrar, Strachan, and Tocher.

The minutes of last meeting were read and approved.

Apologies for absence were intimated from Messrs. Currie, Johnston, McAdam, Mitchell, and Russell.

The report of the General Purposes Committee was read, from which it appeared that intimation had been received that the Council had approved of the suggestion of the Executive that, for registration as students, leaving certificates should be accepted *pro tanto* along with certificates of any recognised body, provided all the six subjects required had been passed at not more than two examinations.

Intimation had also been received that the Council had approved the principle of the draft scheme for the promotion of a University training for pharmaceutical students. The Committee had conferred with Mr. Tocher anent the informal suggestions on the scheme made by University authorities who had seen the scheme. It had been remitted to the Committee of the Board of Examiners to prepare a form of application to be submitted to the four Scotch Universities. A draft of the documents proposed to be submitted was laid before the meeting.

The Committee had considered a proposal that application should be made to the Postmaster-General to institute a Sunday parcels post service for the conveyance of medicines. The Committee was of opinion that such a service could not be instituted without a considerable increase of Sunday postal labour. It was agreed to recommend that medicines requiring to be sent on Sundays should be transmitted by letter post, as was now allowed.

A letter had been received from the American Pharmaceutical Association inviting the members of the Pharmaceutical Society in Scotland to be represented by delegates at the golden anniversary meeting of the Association to be held in Philadelphia on September 8, 1902. It was agreed that the invitation should be suitably acknowledged, and that if any member in Scotland should intend being present he should be asked to act as a delegate.

The report was approved, and it was remitted with powers to the General Purposes Committee to take any action that might be necessary in further maturing the application to be submitted to the Universities anent the scheme of pharmaceutical university training.

The report of the scrutineers of voting papers for the election of Executive was read and arrangements made for the business of the annual meeting.

It was intimated that the House Committee of the Council has directed that the Society's premises in London and Edinburgh should be closed on June 26, 27, and 28 in connection with the Coronation.

This was all the business.

Annual Meeting in Edinburgh.

The annual meeting of members residing in Scotland was held in the Society's House, 36, York Place, Edinburgh, on Friday, June 20, at 11 a.m., Mr. **Peter Boa** in the chair.

The minutes of last meeting were read and approved.

Apologies for absence were intimated from Messrs. Currie, Ewing, Johnston, McAdam, Mitchell, and Russell.

Chairman's Address.

The **Chairman** said the first subject to which he would refer was the new regulation as to leaving certificates. On the initiative of Mr. Maben, the Executive had made a recommendation to the Council that these certificates should be recognised so far as students had them. The Council had been pleased to adopt the recommendation. He thought this would be useful. He had known several cases of students having these certificates before this recommendation was adopted, and they had had to pass all the subjects notwithstanding. The effect of this was that students would not have to take the same subjects twice over. If a student had, say, three leaving certificates, he would get value for them along with the remaining three under some other examining body. The leaving certificates were rather better in quality than some other certificates which the Society accepted, so that there was no deterioration whatever in the quality of the examination.

Local Organisation.

The subject of local organisation had occupied a good deal of attention during the year, and in regard to Aberdeen and Glasgow the districts had been almost completely mapped out. He would take this opportunity of saying that a most important and good work had been done by the Society under this scheme. The idea essentially was to have every Parliamentary division represented by a member of the Society who, for local purposes, was to be regarded as one to whom the Society might refer for information at any time. The carrying out of that idea in Scotland, however, presented some difficulties, rendering it necessary for the Executive to depart from the strict lines suggested by the Council while adhering to the principle laid down, because the irregularity of some of the districts made it difficult to arrange them strictly under the plan which the Council had in view. During the short time that had elapsed since the new plan was instituted the officers under the scheme had on numerous occasions rendered very valuable assistance to the permanent staff and the Council in dealing with matters of administration. He wished to take the opportunity on behalf of the Executive to thank them for the readiness with which those local officers had responded to calls made upon them for information and assistance. The cordial co-operation had made it possible for the permanent staff and the Council to accomplish work for the trade which otherwise it would have been impossible for them to get through.

Sale of Poisons.

In view of certain matters which were under discussion at the present moment—he referred to the Privy Council Departmental Committee on the Sale of Poisons—questions might arise which would make it very important that registered chemists should act together, and he had no doubt that in time this scheme of local organisation would prove extremely useful should any emergency arise. If they wanted to get the whole united influence of the trade throughout the country to bear on Parliament or any other body, there was no doubt that the Divisional Secretaries would be found to give them the assistance which their conduct so far justified them in expecting.

University Training for Pharmacists.

The outstanding feature, perhaps, of their pharmaceutical year was the scheme for the establishment of a curriculum and a degree in pharmacy which was being worked very laboriously and very ably by their friend Mr. Tocher. The matter was mentioned at the last annual meeting. It arose out of a reference then made to the Carnegie Trust, and, as he had said, this scheme was very largely dependent on the work of Mr. Tocher. It had met with the unanimous approval, not only of the large representative meeting held in Edinburgh in February, where it was definitely brought before the pharmaceutical public, but also at meetings subsequently held in Aberdeen, Dundee, and Glasgow, and it was known to be regarded with favour by many teachers in the Scottish Universities He was quite sure they would agree with him in wishing it every success, and that the scheme on which Mr. Tocher had spent so much time and ability would come to a satisfactory completion.

Jubilee and Diamond Jubilee.

Mention was made at the last annual meeting that they were in the jubilee year of the North British Branch and the diamond jubilee of the Society, and the suggestion then indicated had become an accomplished fact. He referred to the dinner by which these events were celebrated by the Scottish members of the Society and the success which attended it.

Examinations.

With regard to the examinations, he was glad to be able to tell them that the number of Major candidates had shown a very large increase over previous years, and there was also an increase in the passes. The number was the largest they had had for many years, and for the July examination they had five entries. In his remarks at the last annual meeting he referred to the subject of failures in the Minor examination, and noted the gradual increase in the passes. It was not so large as they would like, but still it was in the right direction. During the past year the increase had still continued and was now slightly over 40 per cent. That was still a very moderate pass, and he would like to see the passes, at any rate, equal in number to the failures.

Division of the Minor Examination.

The division of the Minor Examination had been discussed considerably during the last year in various places, and it was gradually gaining support not only throughout the country but, he noticed, in the Council, and it was just possible they might have the division of the Minor at no great distance of time. So far it had been associated with the question of a compulsory curriculum. He remembered very nearly twenty years ago taking part in a debate in connection with their junior association in their old rooms in George Street on the subject "Is a Compulsory Curriculum Desirable?" On that occasion the vote was distinctly in favour of a compulsory curriculum, so that they were talking about it twenty years ago, and they were not a bit further forward now than they were then. If the division of the Minor Examination was recognised as desirable, he did not think they should wait for this never-coming compulsory curriculum. Let them have the division of the Minor now and take the compulsory curriculum when it came.

Examiners.

They had the usual election of examiners at the end of the year, and he thought they had been fortunate in their selection. Mr. Sutherland had had previous experience, and in Mr. Meldrum they had a young man from whom they expected good things.

Evening Meetings.

He would take that opportunity of expressing the gratitude of the Executive to the gentlemen who had contributed papers to the evening meetings during the session. Without assistance of that kind the meetings could not go on, and, apart altogether from the information which might be obtained from papers contributed, the meetings formed a very good excuse for members drawing together and having a friendly talk. They should do all they could to make these evening meetings successful. He mentioned as a satisfactory feature the increasing extent to which the library was used, showing that members in Scotland were taking advantage of the facilities which the Society provided for keeping themselves up to date.

Membership in Scotland.

Now he came to a somewhat unsatisfactory department—the membership in Scotland. For the first time since he had had anything to do with making up the annual report they had to admit a decrease of membership in Scotland. According to the voting papers sent out they had a deficiency of forty-one. That was not an absolute figure, but might be taken as representing the shortage. He could not attempt to explain it away. One thing he noticed, however, was that in the Council election 180 fewer voting papers were sent out this year than last. That appeared to show a shortage not only north of the Tweed, but south of it as well. Unfortunately, the figures showed that they in Scotland had rather more than their proper share of the shortage. Some of the shortage might be accounted for by members removing to England, when, though they did not cease to be members of the Society, they no longer voted in the election of the Executive. But he was afraid he must admit there was for the time being, and it was a question for them to consider what were the causes for it. This was the second year in which, instead of the subscriptions being collected by the Divisional Secretaries, they had to be remitted direct to headquarters. It seemed to him, looking at the matter from these two years' experience, that this was a case of over-centralisation. If the Society had reliable Divisional Secretaries he did not see why they should not be utilised for collecting subscriptions. There was, he knew, in certain quarters a feeling that the membership of the Society being an entirely voluntary consideration, it was somewhat undignified to solicit a man for his subscription. That idea was very fine in theory, but he was afraid it would not do in practice. If things went on as they appeared to have done for the last two years, it was a question whether a reversion should not be made to the old style of having the subscriptions looked after to some extent by the representatives of the Society in the different parts of the country.

Doctors and Open Shops.

He would like to refer to another matter which was in their minds last year. That was the subject of open shops kept by doctors, generally by the aid of unqualified assistants. The General Medical Council had not given way in the slightest degree on that point, and had found it necessary to issue a special warning to all medical practitioners that anyone brought before the Council on such a charge in future would be liable to be struck off the Register. In that connection it would be well for them to bear in mind that it had been alleged that the Society prosecuted only assistants in doctors' shops. He wished to say there was no foundation whatever for such a statement. During recent years there had been about thirty assistants in chemists' shops prosecuted in Scotland alone; so that the parties who made statements of the kind he had indicated did it without the slightest foundation. No difference was made. If a complaint was lodged that an infringement had taken place, an inquiry was carried out, and if the necessary evidence was forthcoming it did not matter whether the shop was that of a medical practitioner or that of a chemist. It would be well for them to consider before a complaint was lodged against a doctor's shop whether their own hands were perfectly clean.

Scotch Representation on the Council.

He was sorry to see that they had now only one instead of two members from Scotland on the Council of the Society. All the burden of Scottish business thus fell upon Mr. Storrar. He did not know that they would be better off with two councillors, for they were well served, but Mr. Storrar would have a little less to do, and that would be convenient for him. Last year they had a somewhat heavy death roll to notice, but this year their losses had been fortunately fewer. Within the last few days they had lost by death Mr. Robert Storie, of Dalkeith, one of their Divisional Secretaries. He was a councillor of his own town, and made an excellent Divisional Secretary. During the last few years he had retired from the practice of pharmacy, but continued to take an interest in the welfare of his craft, and discharged the duties of Divisional Secretary most efficiently up to the time of his death.

They would have noticed that the recommendation which the Executive made to the Council some time ago in regard to Professor Stockman, of Glasgow, had been recognised by the Council in his election as an honorary member, thus filling the blank created by the death of Professor Sir Douglas McLagan. This would be satisfactory to all of them, considering the intimate relations which had always existed between Professor Stockman and the pharmacists of Scotland.

They would also notice that three of the members of the Executive from Glasgow had not consented to re-nomination, and they would now miss from their meetings Mr. Currie, Mr. McAdam, and Mr. Anderson Russell. Mr. Currie and Mr. McAdam had been members of the Executive for a long period, and Mr. Russell had been during the years of his office a very active member. He hoped their retirement would only be temporary. He was glad to think that Glasgow would still be represented by Mr. Dunlop and by Mr. Gilmour, who was very well known.

The Assistant Secretary then read the following :—

Report of the Scrutineers.

At a meeting held on February 21, 1902. the Executive appointed June 20, 1902, as the date of election for the ensuing year.

Five hundred and seventy-four nomination papers were issued by the Assistant Secretary on May 24, 1902.

The nomination papers returned showed that fifty-three members had been nominated, of whom the following twenty-three signified their willingness to act if elected :—

1. Boa, Peter, 119, George Street, Edinburgh.
2. Cowie, William Beaverley, 26, Clyde Street, Edinburgh.
3. Cummings, William, 49, Reform Street, Dundee.
4. Currie, Archibald, 162, Ferry Road, Leith.
5. Dey, Alexander John, 19, Duke Street, Edinburgh.
6. Doig, William, 9, High Street, Dundee.
7. Dott, David Brown, 93, Abbeyhill, Edinburgh.
8. Dunlop, Thomas, 181, Albert Road, Pollokshields, Glasgow.
9. Fisher, John Hutchison, 66, High Street, Dunfermline.
10. Giles, William, 123, Crown Street, Aberdeen.
11. Gilmour, James Pinkerton, 385, Cathcart Road, Glasgow.
12. Henry, Claude Francis, 1, Brandon Terrace, Edinburgh.
13. Johnston, John, 14, King Street, Aberdeen.
14. Kerr, Charles, 56, Nethergate, Dundee.
15. Maben, Thomas, 24, Doune Terrace, Glasgow.
16. Mitchell, Donald, 30, Union Street, Inverness.
17. Naysmith, Andrew, 154, High Street, Arbroath.
18. Nesbit, James, 236, High Street, Portobello.
19. Rowland, George Howard Charles, 117, Princes Street, Edinburgh.
20. Spence, Alexander, 135, High Street, Linlithgow.
21. Strachan, Alexander, 138, Rosemount Place, Aberdeen.
22. Tocher, John, 84, High Street, Dumfries.
23. Wilson, William Potter, 36, High Street, Haddington.

A voting list was accordingly drawn up, and on June 11, 1902, five hundred and ninety-seven voting papers were issued. The Scrutineers met last night at seven o'clock, and proceeded to examine the voting papers. The result was found to be as follows:—

Voting papers issued	597
,, ,, returned	251
,, ,, informal	2

There were thus 249 votes to be recorded.

The following have a majority of votes :—

1. Boa, Peter, 119, George Street, Edinburgh.
2. Cowie, William Beaverly, 26, Clyde Street, Edinburgh.
3. Cummings, William, 49, Reform Street, Dundee.
4. Doig, William, 9, High Street, Dundee.
5. Dott, David Brown, 93, Abbeyhill, Edinburgh.
6. Dunlop, Thomas, 181, Albert Road, Pollokshields, Glasgow.
7. Fisher, John Hutchison, 66, High Street, Dunfermline.
8. Gilmour, James Pinkerton, 385, Cathcart Road, Glasgow.
9. Henry, Claude Francis, 1, Brandon Terrace, Edinburgh.
10. Johnston, John, 14, King Street, Aberdeen.
11. Kerr, Charles, 56, Nethergate, Dundee.
12. Maben, Thomas, 24, Doune Terrace, Glasgow.
13. Mitchell, Donald, 30, Union Street, Inverness.
14. Naysmith, Andrew, 154, High Street, Arbroath
15. Nesbit, James, 236, High Street, Portobello.
16. Spence, Alexander, 135, High Street, Linlithgow.
17. Strachan, Alexander, 138, Rosemount Place, Aberdeen.
18. Tocher, John, 84, High Street, Dumfries.

The voting papers and all documents connected with the election are submitted herewith. One voting paper arrived too late to be included in the enumeration.

Peter Boa (Chairman)
George Coull
J. A. Forret

R. L. Hendry
George Lunan
John Robertson.

The result of the poll was as follows :—

1. Boa	228	7. Doig	206	13. Fisher	195
2. Dott	219	8. Dunlop	206	14. Maben	183
3. Henry	216	9. Mitchell	206	15. Johnston	174
4. Kerr	214	10. Naysmith	202	16. Gilmour	157
5. Tocher	211	11. Spence	199	17. Nesbit	142
6. Strachan	208	12. Cowie	196	18. Cummings	122
19. Wilson	109	21. Giles	95	22. Rowland	72
20. Currie	96	22. Dey	92		

On the motion of Mr. David Gilmour, seconded by Mr. Rowland, the report of the Scrutineers was adopted.

The Chairman then declared that the Executive for 1902-1903, would consist of Messrs. Peter Boa, William Beaverly Cowie, William Cummings, William Doig, David Brown Dott, Thomas Dunlop, John Hutchison Fisher, James Pinkerton Gilmour, Claude Francis Henry, John Johnston, Charles Kerr, Thomas Maben, Donald Mitchell, Andrew Naysmith, James Nesbit, Alexander Spence, Alexander Strachan, and John Tocher, together with the President of the Society (Mr. George Thomas Wilkinson Newsholme), the Vice-President of the Society (Mr. Charles Bowen Allen), and Mr. David Storrar (Kirkcaldy) as *ex-officio* members.

On the motion of the Chairman, a vote of thanks was awarded to the Scrutineers.

Limited Companies and Statutory Titles.

Mr. William Lyon said he thought the present was a suitable occasion, and it was right that this meeting should consider the use of the title chemist and druggist by limited companies.

The Chairman said he would be very pleased to hear what Mr. Lyon had to say, but he thought the subject was one that had better be considered in committee. This suggestion was agreed to, and the meeting went into committee to consider the matter.

On resuming, Mr. Lyon moved :—

"That this meeting of members of the Society resident in Scotland, being of opinion that circumstances do not warrant them in expecting in the immediate future legislative enactments of a suitable kind, respectfully suggests to the Council that it bring an action for interdict against the shareholders of a limited company which habitually uses the title 'Chemists and Druggists' in connection with its trade name."

Mr. C. F. Henry seconded the motion, which was unanimously passed and ordered to be sent to the Council.

Dr. George Coull proposed a cordial vote of thanks to the Chairman, which was seconded by Mr. Kerr, and passed with acclamation.

The meeting then closed.

CHEMICAL SOCIETY.

At a meeting held on June 18, at Burlington House, Piccadilly, Professor Emerson Reynolds took the chair, and there was a good attendance of members and visitors. This being the last meeting of the session, there were a large number of papers on the list, and in order that as many as possible might be read the President requested the authors to be as brief as possible. It was announced that the Council had determined to continue holding the fortnightly meetings alternately on Wednesdays and Thursdays, the plan which has been followed during the greater part of the session. The first paper was by Professor Meldola on the

Elimination of the Nitro-Group on Diazotisation.

Experiments had been made on dinitro-*p*-anisidine and similar compounds, and it was found that in the presence of hydrochloric and acetic acids one nitro-group was eliminated on diazotisation, whilst with sulphuric acid diazonium salts were formed. Dr. Tilden then read a paper by Mr. Burrows and himself on

Some New Derivatives of Pinene and Other Terpenes.

After remarking that this was a preliminary notice, Dr. Tilden pointed out that it was exactly twenty-seven years ago that he first suggested nitrosyl-chloride as a reagent for pinene. Nitrosyl chloride adds itself on to the pinene, forming a compound having the formula $C_{10}H_{16}NOCl$. This substance formed the starting point of the new research. This is the only compound of pinene from which the pinene can be recovered. It diazotises aniline, and the pinene, thus regenerated, has all the physical properties of the original substance; except that its rotatory power has disappeared. It has been shown that this is not a racemic modification, hence the change must be accounted for by considering it to be due to internal compensation. None of the formulæ at present proposed explains this behaviour. The evidence is as yet incomplete, but the authors are carrying out their research on a new line, by studying additive compounds rather than merely oxidation products which result from the breaking down of the molecule. Boiled with alcoholic potassium cyanide, pinene nitrosyl chloride yields a substance having the formula $C_{10}H_{16}NOCN$. It has not been determined yet whether this body is a nitrile. It does not, however, readily undergo hydrolysis on boiling with alkali. The behaviour of this compound with acids has been studied; also a methyl compound has been prepared and studied. Dr. Donnan and Mr. Bassett next communicated the results of some work on the

Colour Changes in Cobalt Chloride Solution.

The change from red to blue, which has been generally considered to be due to variation in the hydration of the salt, they consider is to be attributed to the formation of complexes, such as $CoCl_6$. The behaviour of the solutions on being subjected to a current of electricity is quite in accordance with this view. Dr. Chattaway then very briefly outlined the important points in his paper on

A New Type of Nitrogen Chlorides.

Hitherto none of these has been prepared containing three groups, but he has succeeded in obtaining several of these compounds. Mr. Russell followed with a short account of his work on the

Behaviour of Chlorine and Hydrogen.

They find that when absolutely dry the combination of these gases is not retarded; when sparked explosion, with complete combination, took place at once. In sunlight the combination is not so complete. Several other papers were taken as read. Amongst others on the list was a paper by Professor Collie and Mr. T. Tickle, from the Research Laboratory of the Pharmaceutical Society.

EXETER ASSOCIATION OF CHEMISTS AND DRUGGISTS.

The members of this Association met at the Royal Albert Memorial College on Wednesday, June 18, at the invitation of Mr. A. W. Clayden (Principal of the College) to discuss with him the question of the advisability or otherwise of continuing the

Pharmacy Classes

in connection with the college. The President (Mr. G. Stocker) was accompanied by Messrs. T. C. Milton, E. Lemmon, F. Vinden, H. Gadd, Harris, J. Hinton Lake, T. Tickle, B.Sc., and Messrs. W. H. Lewis (instructor in chemistry) and H. W. Gadd (instructor of pharmacy), as representing the classes at the college.

Mr. Clayden explained that the classes were originally started at the request of the chemists of Exeter to supply what he understood was a want. They had been fairly successful, in so far that the students they had had in them who had been sent up to the examination of the Pharmaceutical Society had been successful, but there had never been an adequate number of students, and now the governors were pressed to undertake various new classes, such as those for commercial subjects, and they had been inquiring into the hours of the college staff and the number of pupils each teacher had. Therefore if these classes did not improve there would probably be a motion for their discontinuance and the money spent in another direction. He asked for an explanation of this lack of support. He did not think it was the fault of the teachers, because those students who had been through the course had been successful. He suggested whether it was not possible that it was owing to the hours of the classes being inconvenient to the chemists. They had a number of pharmaceutical students entering for the purely scientific subjects, such as chemistry, physics and botany, but these same men did not go to the pharmacy and materia medica classes.

Mr. Stocker asked whether the instruction given in pharmacy and materia medica supplemented that which students had learnt in the shop, or whether it was merely a repetition of their daily work, because if so it was not necessary that they should go to the classes then.

Mr. Milton said there was a sort of impression abroad, possibly without foundation, first, that there was not much information to be obtained beyond what the students could learn in business, and, secondly, that there was not adequate provision for the proper teaching of the subjects.

Mr. H. W. Gadd said he undertook these classes at short notice last autumn, and had to evolve a syllabus. His object had been to supply whatever the student required and to supplement the knowledge that he obtained elsewhere. This session, since last October, the only students who had presented themselves had been some who had had no other opportunities of learning prescription reading, posology and dispensing, and therefore he had to devote a good deal of time to teach them those subjects; but if more advanced students entered, those who had had opportunities of learning those subjects thoroughly in their daily business, he should not require to take up their time by going over them again, but spend the time in teaching them theoretically and practically the more elaborate processes of the Pharmacopœia and particularly the standardisation of drugs and galenicals.

Mr Clayden said that with regard to the room, he thought there was more accommodation than was generally supposed, but at the same time in the winter session they were very much handicapped by the advanced and elementary students having to work in the same laboratory, but the governors had now under consideration a scheme for building additional laboratories; when he had no doubt a room could be specially set apart for pharmaceutical processes.

Mr. Lewis gave some information about his chemistry teaching, pointing out that in the organic class the students had an opportunity of making various articles of pharmaceutical interest, such as chloroform, ether, etc.

The President communicated to the Principal the resolution already passed by the Association, that it was advisable that the classes in pharmacy and materia medica should not be discontinued, but that greater provision should be made for the practical teaching of those subjects; that, subject to this being done, the members of the Association would support these classes, and at the same time suggest the advisability of their being advertised in the technical journals and notices sent to the chemists of the neighbourhood.

Mr. Clayden promised to lay the resolution before the Governors.

The President, Messrs. Lake, Lemmon, and Milton were appointed a sub-Committee to confer with Mr. Clayden from time to time on the subject of the pharmacy courses.

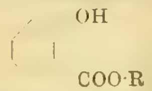
Several names were given in as probable students next session, and on the motion of the President, seconded by Mr. Lake, Mr. Clayden was thanked for his courtesy in receiving the members.

Mr. Clayden, in reply, thanked the members for accepting his invitation. He was always anxious to be in touch with the heads of such business as he was asked to provide technical instruction for.

RECENT PATENTS.

New Combinations of the "Salols" with the Alkaloids of Cinchona.

The patentees have found that a therapeutic value is possessed by the hitherto unknown salicylic ethers of cinchona alkaloids, such as the salicylic ethers of quinine, cinchonine, or cinchonidine, having the general formula :—



(where R indicates the radicle of a cinchona alkaloid). These new compounds are obtained by heating the alphyl ethers of salicylic acid, generally termed "salols," with the cinchona alkaloids. In this way phenyl salicylate and quinine interact with the production of phenol and quinine salicylate. Such derivatives are tasteless, and are valuable remedies for fever. Other salols and other cinchona alkaloids react similarly. (Farbenfabriken vormals Friedrich Bayer and Co., Elberfeld, Germany, through Newton and Son, 6, Breams Buildings, Chancery Lane, London. No. 8,165, of 1901.)

Manufacture of Rubber Sponge.

A process has recently been described for preparing artificial sponges by introducing salts adapted to be decomposed by heat whilst freeing gaseous products, *e.g.*, ammonium bicarbonate has been so used. Such methods have the disadvantage that the formation of pores often takes place in an undesirable manner, owing to the too energetic generation of the gas. The present invention avoids these disadvantages by providing for the addition to the rubber material before vulcanising it, for example, of soluble salts of alkalies, alkaline earths, metallic salts, or better, by the addition of appropriately shaped bodies to ensure that the pores shall have a definite size and form. From the mass thus obtained the added salts or bodies are removed after vulcanisation by washing out or by dissolving the same so that the separate insertions leave corresponding hollow spaces in the rubber mass. The solid bodies may be seeds or formed of clay and other substances. (Vereinigte Gummiwaaren-Fabriken Harburg-Wein Vormals Menier—J. W. Reithoffer, Harburg-on-the-Elbe, Prussia, through Haseltine, Lake, and Co., 45, Southampton Buildings, London, W.C.; No. 22,201, of 1901.)

Gum Arabic as a Preservative of Butter and other Fats.

The subject of this invention is a process for the preservation of butter and other fats by mixing therewith powdered gum arabic in pieces or in solution. It is equally applicable to mixtures of margarine with butter. The rôle of the gum is to absorb a great part of the liquid, water or milk, which the fat contains, and, as gum arabic and its concentrated solutions are not susceptible to fermentation, the fatty matters with which it is mixed are in an unfavourable environment for the development of microbes. In the case of butter the proportion is 30 to 100 Gm. per kilogramme of butter, 10 to 50 Gm. of common salt being afterwards added. After mixing the surface of the butter is sprinkled with a thin layer of the powdered gum. If required the gum may be removed prior to consumption by washing the butter with water. The quantity of gum required in other cases may vary from 3 to 20 per cent. by weight of the material treated according to the temperature to which the material will be subsequently exposed. (Force, Société Anonyme, 50, Rue de la Cuiller, Antwerp, Belgium, through S. C. Marks, 18, Southampton Buildings, Chancery Lane, W.C., No. 7,620 of 1901.)

Manufacture of Anhydrous Caustic Baryta.

By this process for the production of anhydrous caustic baryta from barium salts, the salts are subjected to a high temperature in closed muffles heated at the top as well as underneath. (P. L. Martin, 20, Rue des Orphelins, Tourcoing, France, through Wheatley and Mackenzie, 40, Chancery Lane, London, W.C.; No. 601, of 1901.)

Manufacture of Chloral.

This process for the production and rectification of chloral consists in heating chlorine and chlorinated alcohol in a common vessel, causing the volatile products to be condensed successively and distilling the final product with sulphuric acid. The process is continuous, and the leading feature is the fact that when chlorine acts on concentrated alcohol the chloral and its hydrate are the most volatile products contained in the original liquid, from which they may be removed by distillation. The final product may be rectified by distillation with chalk or sodium bicarbonate. The patented apparatus may also be employed for converting anhydrous chloral into chloroform for surgical work. (J. A. Besson, 23, Rue des Carrières St. Julien, Caen, France, through Charles Baeur, Imrie and Co., 72, Cannon Street, London, E.C.; No. 17,202, of 1900.)

The Malting of Rice.

A patent has been taken out for converting rice into malt of highest quality, suitable for brewing and other purposes, as in the manufacture of glucose, and especially to avoid putrefaction either in the resulting product or in the liquors manufactured therefrom. By this process unshelled rice is subjected to a process of germination in which, at a temperature of from 35° to 38° C., it alternately germinates below water, and is exposed to the action of air for the absorption of oxygen. (E. C. Schrottky, Johann-Georgen-Allée 17, Dresden, Germany, through F. Wise Howarth, 46, Lincoln's Inn Fields, London, W.C.; No. 9,823, of 1901.)

PHARMACEUTICAL SOCIETY.

OFFICIAL NOTICES.

ANNUAL SUBSCRIPTIONS.

All Annual Subscriptions are now due.

Subscription payable by Members	One Guinea
Subscription payable by Student-Associates ..	Half-a-Guinea
Life Subscription (Members)	Ten Guineas

Subscriptions should be remitted by Post-Office Order, Postal Orders, or Cheque, direct to the Secretary, 17, Bloomsbury Square, or may be paid at the Offices in London or in Edinburgh.

Cheques should be drawn in favour of RICHARD BREMRIDGE, or Bearer, and crossed "London and Westminster Bank," and Post Office Orders and Postal Orders should be made payable at the Western Central District Post Office.

ELECTION OF COUNCIL AND AUDITORS.

Extract from Bye-Laws.

Section V., Clause 3.—Any Member qualified to vote desirous of nominating any other Member for election as a Member of the Council or as an Auditor, shall on or before the 18th day of March in every year give a notice signed by him to the Secretary, with the name and address of the nominee. The Secretary shall on or before the 20th day of March then instant address and send by post to each nominee a notice of his having been nominated, and inquiring whether he will accept office if elected, and in default of a written reply from such nominee being received on or before the 31st day of March then instant declaring his readiness to accept office if elected, such nominee shall not be deemed eligible or willing to be elected.

APRIL EXAMINATIONS.

The Boards of Examiners will meet in April for the purpose of conducting the examinations contemplated by the Royal Charter of Incorporation, and provided for by the Pharmacy Acts.

All notices of intention to attend for examination must be in the hands of the Registrar, 17, Bloomsbury Square, W.C., on or before

Saturday, March 15, 1902,

and such notices must be in accordance with the regulations of the Boards of Examiners.

The practical work for the Minor Examination is expected to commence on April 1 in Edinburgh and in London.

CALENDAR AND REGISTER.

The new editions of the Calendar and the Register are now ready. Application for copies should be made to the Secretary, 17, Bloomsbury Square, W.C. The price of the Calendar is 2s., and of the Register 5s., exclusive of postage, but in the case of copies purchased by subscribers to the Society postage is not charged.

Calendar for March, 1902.

Day of M	Day of W	Events of the Month.	Sun Rises	Sun Sets.
1	S	Inter-Pharmacy Football League Metros. *v.* Square.	6.49	5.37
2	**S**	◖ Last Quarter, 10.30 a.m.	6.47	5.38
		Third Sunday in Lent.		
3	M	Rev. J. G. Wood, Naturalist, died 1889.	6.45	5.40
4	Tu	Pharm. Soc. G. B. Finance and other Committees.	6.43	5.42
5	W	Pharm. Soc. G.B., Council Meeting, at 11 a.m.	6.41	5.44
		Pharm. Soc. of Ireland, Council Meeting at 3 p.m.		
		Chemists' Managers' and Assistants' Society, Council Meeting, at 9.30 p.m.		
6	Th	Chemical Society at 8 p.m.	6.39	5.46
		Chemists' Assistants' Association at 8.30 p.m.		
		Linnean Society, at 8 p.m.		
		Midland Pharmaceutical Association.		
7	F	Royal Institution, at 9 p.m.	6.36	5.47
8	S	Pharmaceutical F.C. *v.* Law Sports Club.	6.34	5.49
9	**S**	**Fourth Sunday in Lent.**	6.32	5.51
10	M	● New Moon, 2.50 a.m.	6.29	5.53
11	Tu	Pharm. Soc. G.B., Evening Meeting in London.	6.26	5.55
		Bradford Chemists' Association.		
12	W	Pharm. Soc. G. B. Library, etc., Committee.	6.24	5.57
		Chemists' Managers' and Assistants' Society, Dinner.		
		Manchester Pharmaceutical Association.		
		Newcastle Chemists' Association.		
		Public Dispensers' Association "Smoker."		
13	Th	Chemists' Assistants' Association at 8.30 p.m.	6.22	5.58
14	F	Royal Institution, at 9 p.m.	6.20	6.0
15	S	Pharmaceutical F.C. *v.* Hampstead.	6.17	6.2
		Entries close for April Examinations.		
16	**S**	◗ First Quarter, 10.13 p.m.	6.15	6.4
		Fifth Sunday in Lent.		
17	M	St. Patrick's Day.	6.13	6.6
18	Tu	Last Day for Nominations for Council.	6.10	6.7
19	W	Pharm. Soc. G.B., Evening Meeting in Edinburgh.	6.8	6.8
		Chemical Society at 5.30 p.m.		
		Western Chemists' Association (of London).		
20	Th	Chemists' Assistants' Association, Dinner.	6.7	6.10
		Linnean Society, at 8 p.m.		
21	F	Royal Institution, at 9 p.m.	6.5	6.12
22	S	Pharmaceutical F.C. *v.* Old Boys.	6.2	6.13
23	**S**	**Palm Sunday.**	6.0	6.15
24	M	○ Full Moon, 3.21 a.m.	5.57	6.17
25	Tu	Bradford Chemists' Association.	5.55	6.18
26	W	Chemists' Managers' and Assistants' Society, at 9 p.m.	5.53	6.20
27	Th	Maunday Thursday.	5.51	6.22
28	F	Good Friday.	5.48	6.23
29	S	Wine Licences (Retailers) Expire.	5.46	6.25
30	**S**	**Easter Day.**	5.44	6.27
31	M	Bank Holiday.	5.41	6.28

Note.—Secretaries of societies and local pharmaceutical associations are requested to send early intimation of forthcoming meetings, in order that notices may be included in this column and so prevent possible clashing of dates when arrangements are being made for other meetings. Fuller information about forthcoming meetings will be found in the "Diary of the Week."

APPLICATIONS FOR TRADE MARKS.

Instructions for Registration.

Application for the registration of a trade mark must be made on Application Form F, which costs five shillings, and can be obtained through any money-order office. The form contains general instructions for making the application, and, after being filled up, must be posted to the Comptroller, the Patent Office (Trade Marks Branch), 25, Southampton Buildings, London, W.C. If the mark applied for is one which can be accepted for registration, the applicant must next fill up the Registration Form I, which costs one pound, and can also be obtained through any money-order office. That form must also be sent to the Comptroller, when the mark will be advertised in the *Trade Marks Journal*, after which it will be duly registered if not opposed. A renewal fee of one pound must be paid by the proprietor of a trade mark every fourteen years.

*From the Trade Marks Journal, February 12, 1902.**

Class 3.

E. Nolzen (Facsimile Signature).—239,759. Medicated Preparations for Human Use. Eugen Nolzen, Luisen Strasse 27-28, Berlin, Germany; Apothecary.—July 26, 1901. Address for Service in the United Kingdom, 55. 56. Chancery Lane, London, W.C.

Renson.—242,098. An Emulsion of Cod Liver Oil, for Human Use, as Medicine. The Renson Manufacturing Co., No. 11, Woodbridge Street, Clerkenwell, in the County of London; Manufacturers of High-class Toilet Preparations and Perfumes.—November 19, 1901.

Konaphos.—243,196. A Medicinal Tonic for Human Use. Arthur Goldthorpe, 152, Plumstead Common Road, Plumstead, London, S.E.; Chemist.—January 10, 1902.

Kluzo.—241,213. A Medicinal Lotion for the Eyes (for Human Use). Ferdinand Spoor, 2, Oxford Terrace, Bishop Auckland; Commission Agent.—October 11, 1901. "The essential particular of the Trade Mark is the Word 'Kluzo,' and any right to the exclusive use of the added matter is disclaimed, except in so far as it consists of the name and address."

Combination of Devices and the Word "Occidine."—242,380. A medicine for Human Use. Maclean Stuart and Co., 21, St. Andrew Square, Edinburgh; Manufacturers.—November 30, 1901. "The essential particulars of the Trade Mark are the combination of devices and the word 'Occidine,' and any right to the exclusive use of the added matter is disclaimed."

Oopinal.—241,651. Patent medicines (for Human Use). Warr's Pure Drugs Co., 2, Sager Street, Hough Lane, Lower Broughton, Manchester, Lancashire; Manufacturers.—October 30, 1901.

Class 4.

Pyramid (Pyramidal Device).—243,277. Glycerin (Crude or Prepared), for Use in Manufactures. Joseph Crosfield and Sons, Ltd., Bank Quay, Warrington, Lancashire; Soap Manufacturers.—January 13, 1902.

Class 11.

241,563.—A preparation (not of Precious Metal) for stopping teeth. Dr. Fritz Hobein, Komotau, Bohemia, Austria; Chemist.—October 26, 1901. Address for Service in the United Kingdom, c/o J. Owden O'Brien, 6, Bank Street, Manchester. The essential particulars of the Trade Mark "are the combination of devices and the facsimile of the applicant's signature, and the applicant disclaims any right to the exclusive use of the added matter."

242,345.—Instruments, Apparatus, and Contrivances, not Medicated, for Surgical or Curative Purposes, or in Relation to the Health of men or animals. Southall Bros. and Barclay, Ltd., 19, 20, 21, Lower Priory, Birmingham; Manufacturing Chemists.—November 29, 1901. The device represented is that of a flower of the cotton plant.

From the Trade Marks Journal, February 19, 1902.

Class 1.

Pyrophan.—241,892. A Chemical Preparation for Photographic Purposes. Farbenfabriken vormals Friedrich Bayer and Co., Koenigstrasse 27, Elberfeld, Germany; Manufacturers.—November 11, 1901. Address for Service in the United Kingdom, care of Newton and Son, 6, Breams Buildings, Chancery Lane, London, E.C.

Class 3.

Glycobenphene.—242,067. Medicines for Human Use. The Henry Heil Chemical Company, 212 to 214, South Fourth Street, St. Louis, Missouri, United States of America; Importers, Manufacturers, Jobbers, and Exporters of Chemical Apparatus and Chemicals.—November 18, 1901. Address for Service in the United Kingdom, care of W. Lloyd Wise, 46, Lincoln's Inn Fields, London, W.C. No claim is made to the exclusive use of the word "Glyco."

Colcura (in written characters).—242,274. A Medicine for Human Use Internally and Externally. Theodore Stancombe Rendall, 76, Fleet Street, Torquay, Devonshire; Chemist.—November 27, 1901.

A Figure Representing Oannes, the Fish Deity of the Chaldeans.—242,324. Chemical Substances Prepared for Use in Medicine and Pharmacy. Henry Solomon Wellcome (trading in the name of Burroughs Wellcome and Co.), Snow Hill Buildings, Holborn Viaduct, London; Manufacturing Chemist. —November 28, 1901.

Class 39.

Dalox.—243,124. Photographic Paper. John J. Griffin and Sons, Limited, 20-26, Sardinia Street, Lincoln's Inn Fields, London, W.C.; Manufacturers.—January 7, 1902.

Class 47.

Hermosine (in written characters).—242,510. A Liquid for Cleaning Purposes included in Class 47. Hippisley Cox, 8, Richmond Mansions, Putney, London, S.W.; [having no occupation]—and Isabel Hart Isaacson, 38, South Audley Street, Grosvenor Square, London, W.; [having no occupation]. —December 6, 1901.

Class 48.

Bri' Bron.—243,205. Perfumery (including Toilet Articles, Preparations for the Teeth and Hair, and Perfumed Soap). William Ballin Hinde, 81, Great Queen Street, London, W.C.; Manufacturer.—January 10, 1902.

Combination of Devices, including Block of Buildings, Prize Medal of the Paris Exhibition, and printed matter.—242,352. Eau de Cologne. The firm trading as Johann Maria Farnia, gegenüber dem, Jülichs-Platz, Cologne, Germany; Distillers of Eau de Cologne.—November 29, 1901. Address for Service in the United Kingdom, care of Messrs. J. and R. McCracken, 38, Queen Street, Cheapside, London, E.C. "The essential particular of the Trade Mark is the device, and any right to the exclusive use of the added matter, except in so far as it consists of the name and address, is disclaimed."

Capilliphor.—243,212. Preparations for the Hair. Herman Schmid, care of Mrs. Stark, 81, Talbot Road, London, W.; Engineer.—January 10, 1902. No claim is made to the exclusive use of the word "Capilli."

Class 50.

Scrubbo.—242,273. A Preparation, Compound or Substance for Polishing or Cleansing Purposes included in Class 50. Lever Bros., Limited, Port Sunlight, Cheshire; Soap Manufacturers.—November 27, 1901. No claim is made to the exclusive use of the word "Scrubb."

Capstan (in written characters).—242,975. Polishes, Pastes and Powders included in Class 50, for Cleaning and Polishing Furniture, Leather, Metal and Wood. Harold Ivan Llewellyn Griffiths, 20, Mount Pleasant, Liverpool; Manufacturer of Polish.—December 31, 1901.

COMPANY INTELLIGENCE.

Cadrones, Ltd.—This company was registered on February 10 with a capital of £2,000, in £1 shares, to acquire as a going concern and carry on the business of a chemist and druggist, now carried on by W. C. Jones at 2, Queen's Road, Bayswater, under the style or firm of W. C. Jones and Co. There is no initial public issue, and the company has been registered without articles of association.

The Nordrach-on-Dee Sanatorium, Limited, has been registered in Scotland with a capital of £55,000 in £1 shares, the object of the company being to acquire from David Lawson, doctor of medicine, the twenty-five acres of ground belonging to him in the parish of Banchory-Ternan, Kincardineshire, and the buildings of the sanatorium known as Nordrach-on-Dee, and to carry on a sanatorium for the treatment by open-air methods of pulmonary tuberculosis and allied diseases.

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*Any objection to the registration of an application for the registration of a trade mark must be stated on Trade Mark Form J, obtainable at any money order office, price one shilling. Such objection must be lodged with the Comptroller within a month of the date given above.

Cheshire and Lancashire Soap Manufacturing Company, Limited.—This company was registered on January 31, with a capital of £5,000, in £1 shares, to acquire the business carried on at Winsford, Cheshire, and elsewhere by the Salt Union, Limited, as soap makers, candle makers, seed crushers, paper and varnish makers, dealers in oil, tallow, glycerin, chemicals, etc. Minimum subscription, 40 per cent. of the shares first offered to the public. Registered office, New Road, Winsford, Cheshire.

Bovril, Ltd.—At the fifth annual general meeting of the shareholders, held on Friday, February 14, at the company's offices, 152-166, Old Street, E.C., Viscount Duncannon, C.B., in the chair, the directors' report for the year 1901, referred to last week, was adopted, and on the motion of Mr. F. Gordon, seconded by Mr. R. B. Johnston, Viscount Duncannon, C.B., and Dr. Farquharson, M.P., were re-elected directors, and Messrs. Jackson, Pixley, Browning, Husey and Co. were re-appointed auditors.

Durant and Company, Limited.—This company was registered on February 13, with a capital of £16,000, in £1 shares, to acquire the business carried on at 21, Rosebery Avenue, E.C., and at Mount Pleasant, Clerkenwell, W.C., by L. A. Lewis, A. J. Noyes, and F. C. Monnickendam, as Durant and Co., and, generally, to carry on business as manufacturers, vendors, and proprietors of toilet preparations, ointments, medical compounds, soaps, essential oils and perfumes; as druggists, sundriesmen, etc. No initial public issue. The directors are L. A. Lewis, A. J. Noyes, and F. C. Monnickendam. Registered office, 21, Rosebery Avenue, E.C.

Cyanide Plant Supply Company, Limited.—This company was registered on February 12, with a capital of £1,000, in £1 shares, to carry on the general business of consulting engineers, assayers, chemists, and druggists; to undertake and transact all kinds of agency business; as merchants, shippers, and shipping contractors, manufacturers of and dealers in cyanide plant, mining machinery and tools; as miners, smelters, and metallurgists; makers of pumps, lamps, furnaces, rolling stock; to acquire and turn to account any real or personal property; as bankers, financiers, and concessionnaires. No initial public issue. Registered without articles of association. Registered office, 56, New Broad Street, E.C.

PERSONALITIES, BUSINESS CHANGES, ETC.

Notices of business changes, etc., should be sent by Divisional Secretaries or the persons interested, and will then be inserted free.

Mr. J. R. Jarrett, chemist and druggist, has recently opened a business at Trawsfynydd, Merioneth.

Mr. W. Spencer Turner, Ph.C., announces that he has left Norwich, and has reopened his shop at Willingham, Cambs.

Professor Frankland, Professor of Chemistry, Birmingham, has had conferred upon him the honorary degree of LL.D. by St. Andrews University.

Mr. H. T. Doble, Ph.C., of Kingwilliamstown, Cape Colony, son of Mr. H. T. Doble, chemist, Tavistock, has recently obtained the diplomas of M.R.C.S.Eng. and L.R.C.P.Lond.

Messrs. H. B. Lloyd and F. H. King have purchased the business of the late Mr. J. R. Mowatt, at 109, High Street, Cheltenham, and will carry it on under the title of Mowatt and Company.

Lieut. Geo. Ellis, M.R.C.V.S., son of Mr. A. Ellis, chemist, South Shields, has been selected by the War Office Veterinary Department, and ordered to proceed immediately from Aldershot to Fiume, in Austria, where he will take charge of a large consignment of remounts for the army in South Africa.

Mr. Alfred Russell Fox, F.L.S., M.P.S., has been elected a member of the Sheffield City Council, where he will represent Crookesmoor Ward. Mr. Fox, who stood as a Liberal candidate, defeated Mr. J. J. Frost, the Conservative nominee, by 1,695 votes to 1,542. In November last a Conservative successfully contested the Ward, obtaining a majority of 143, consequently Mr. Fox is to be congratulated on his victory.

Mr. Henry O'Connor, M.P.S.I., of 54, Lower Sackville Street, Dublin, having been appointed an examiner to conduct the examinations for the purposes of the Pharmacy Act (Ireland), 1875, and the Pharmacy Act (Ireland), 1875, Amendment Act, 1890, in place of Mr. William Vincent Johnston, M.P.S.I., resigned, the Lord Lieutenant of Ireland and His Majesty's Privy Council in Ireland have approved of the appointment.

Sir Joseph Henry Gilbert, F.R.S., LL.D., agricultural chemist, who was Sibthorpean Professor of Rural Economy at Oxford from 1884-90, and who died on December 23 last, bequeathed the portrait of himself by his brother, Josiah Gilbert, to the University of Oxford, to be placed in the library of the Sibthorpean Professor of Rural Economy. His estate has been valued at £4,781 gross, including personalty of the net value of £3,287.

SOCIETY AND ASSOCIATION NEWS.

Huddersfield Chemists' Association.—The inaugural dinner of this Association is to be held at the Queen Hotel, Huddersfield, on Wednesday, February 25, at 6 p.m. Mr. Newsholme, President of the Pharmaceutical Society, and Mr. Glyn-Jones are expected to be present.

Wigan and District Chemists' Association.—At a meeting of this Association, held on February 5, the question of Sunday opening was discussed, and it was decided that the most suitable time for opening for the public convenience would be from 7.30 to 8.30 on Sunday evenings.

Public and Poor Law Dispensers' Association.—The annual smoking concert of this Association will be held at Stone's Restaurant, The Broadway, Ludgate Circus, E.C., on Wednesday, March 12, at 8 p.m. A good programme has been arranged, and tickets, 1s. each, may be obtained from the Hon. Secretary, Mr. H. T. Samuel, 7a, Grand Parade, Archway Road, Highgate, N., or of any member of the Association.

School of Pharmacy Students' Association.—There will be a social meeting on Wednesday, March 5, in the Lecture Theatre, at 17, Bloomsbury Square (by permission of the Pharmaceutical Society). Professor J. Norman Collie, F.R.S., will give an address on The Lofoden Islands," illustrated by numerous lantern slides. The chair will be taken at 8 p.m. by Professor Green, F.R.S., D.Sc., the President of the Association. It is hoped that there will be a large audience present to hear Professor Collie. Early application for visitors' tickets, which will be issued free of charge, should be made to the Hon. Secretaries of the Students' Association, 17, Bloomsbury Square, London, W.C.

North-East Lancashire Chemists' Association.—A new but pleasing departure was made by the North-East Lancashire Chemists' Association on Thursday, February 13, when members were allowed to have the company of their wives and other lady friends at a gathering held at the White Bull Hotel. Mr. J. Hindle gave a lecture on "Switzerland," which was illustrated with numerous limelight views. Mr. Hindle delivered his lecture in a most interesting manner, relating many little incidents that took place on his last visit, and kept quite a humorous vein running throughout. Musical items were contributed, the vocalists being Mr. John Walton and Mr. C. F. Critchley. The accompanist was Miss G. Hindle. Refreshments were also served during the evening, which was spent in a most enjoyable way. Mr. Holt moved, and Mr. Gifford seconded, a vote of thanks to the lecturer, and a vote of thanks was accorded to Mr. H. Haworth, who presided in the unavoidable absence of Mr. Critchley. Mr. Pickworth was also thanked for organising the affair, and it was decided to invite the presence of ladies at such assembles in the future.

SCHOOL AND COLLEGE NEWS.

Westminster College of Pharmacy.—On Friday, February 14, Mr. G. S. V. Wills entertained the past and present students of the College at a smoking concert held in the Council Chamber, Holborn Restaurant. There was a large number present, including the President and members of the Council of the Chemists' Assistants' Association. Mr. G. T. Dobson occupied the chair. An excellent musical programme was provided, consisting of about twenty items. After a vote of thanks to the Chairman, a most enjoyable evening terminated at 11.15 by the singing of "Auld Lang Syne" and the National Anthem.

School of Pharmacy Students' Association.—On Friday evening, February 14, Mr. A. N. Hirst, the senior "Bell" scholar for the present session, read a paper on "Dissociation," a very good number of members, both ladies and gentlemen, being present. In a few introductory remarks the Chairman, Mr. E. T. Neathercoat, commented on the spirit of *bon camaraderie* that was so evident between all the students, and regretted that "dissociation" would have to take place amongst them before long. Mr. Hirst's paper, though brief, was interesting, diagrams and black-board demonstrations serving to illustrate the main points. At the close, several queries were put to and successfully answered by him. The meeting terminated with the customary vote of thanks, moved by the Chairman, seconded by Mr. Morris Stranack, and carried unanimously, with much applause.

Football.—The match, London College *v.* Muter's, was played at Wormholt Farm on Saturday last and, contrary to general expectation, produced a very keen struggle, London only just winning by the odd goal, the scores standing at the close at four to three. London attacked strongly at the start, and as a result of about twenty minutes' play were three goals to the good, then Muter's had a turn, and by sheer hard play brought the scores to three to two at half-time and level just a little later. London were now playing up better, and had decidedly the better of the game, and scoring once more won as stated.——A Square XI. played the Polytechnic at Wimbledon on Saturday last, and received their first defeat, by two to one. The sides were very evenly matched, but the weak point in the Square XI. was the shooting of the forwards. Hewlett scored from a penalty in the first half, and it was not till ten minutes before time that the Polytechnic equalised. They then succeeded in another dash, and took the lead in the last few minutes. Team: Cleghorn; Martin, Paterson; Williams, Moore, Hirst; Hines, Allen, Mitchell, Hewlett and Stranack.

West of Scotland College of Pharmacy.—On Wednesday last the students, along with the Principal, paid a visit to the People's Palace, in search of Nature knowledge as it is to be found there. The Curator fulfilled a promise made at the last visit to explain the exhibits, doing so in a most interesting and instructive fashion. Beginning with a octohedron model crystal, he pointed out its poles, polar edges, axes, etc., and showed how, by a process of truncation, the common cube could be obtained, and other modifications. His remarks were illustrated by splendid native crystals of pyrites, galena, garnet. Having briefly discussed the other types, he took up cleavage, pointing out that when a rhomb of calc spar is broken up into the finest powder, each particle, under the microscope, is seen to be identical with the original form. Another example he gave was mica, a hexagonal crystal, whose cleavage is so fine that the thinness of the films is only limited by our power of splitting them apart. Mr. MacNair then took up the occurrence of minerals, showing sections of veins, crystallisation of garnets from a matrix, and water deposited rocks. Many minerals, as stibnite, cinnabar, celestine, horn silver, and fluor spar, were examined by hand and eye by the students. Opals also came in for discussion, their origin being the infilling of steam vesicles in lava by colloidal silica, introduced by percolating water. A cordial vote of thanks to the Curator brought the proceedings, which had lasted a hour and a half, to a close, and afterwards the students adjourned to the neighbouring fields and engaged in a game of football.

MISCELLANEOUS NEWS.

Readers are requested to send items of local news of general pharmaceutical interest. When newspapers are sent, the passages of interest should be marked.

Dangerous Lozenges.—The *Manchester Evening News* of February 12 states that Ernest Gray (28), a clerk, is lying in the London Hospital suffering from injuries caused under peculiar circumstances. He had had a cold, and was taking chlorate of potash lozenges, which he kept loose in the "fob" pocket of his coat. Suddenly, owing to friction, it is supposed one of these lozenges ignited, with the result that his clothes were burned through, and his side burned.

Hull Chemist's Affairs.—An application for the annulling of the bankruptcy order against William Lowson Loten, chemist, was made to his Honour Judge Raikes at the Hull County Court on Friday, February 14.—Mr. Williamson, in making the application, said the receiving order was made on November 30, 1900, and since the adjudication Mr. Loten had paid the amount of his liability in full, with the addition of 4 per cent. interest.—The Official Receiver had no objection, and the application was granted.

Wholesale Chemists' and Druggists' Cricket Championship League.—On Friday, February 14, a grand evening concert was held in the Holborn Town Hall, Mr. Peter MacEwan in the chair. There was a large attendance, and an excellent programme, the following well-known artistes taking part:—Mr. Albert Jorden, Mr. A. Elliston Webb, Mr. Frank Hook, Mr. Alexander Edwards, Mr. William Edwards, Mr. W. H. Berry, Mr. Fred Russell, Mr. Adolph Fowler, Mrs. W. H. Berry, Miss Maud Fowler, and Miss Kate Willey. During an interval the challenge cup was presented to Burroughs Wellcome and Co.'s Cricket Club by the Chairman. A very enjoyable evening was brought to a close by the singing of "God Save the King."

Stamp Duty on Medicines.—Chemists in Plymouth and District have recently received a visit from an official presumably attached to the Inland Revenue Department of Somerset House. This individual carelessly asks for a bottle of cough mixture, lozenges and allied preparations, and in the course of a week the chemist receives a notification pointing out that his preparations are liable to stamp duty, and asking for an explanation as to why the fine of £10 should not be recovered. Many labels hitherto considered duty free by chemists and label printers are now held liable to stamp duty. It therefore behoves chemists to carefully select any doubtful labels and submit them to the authorities for confirmation. Several offences are of a most trivial nature, and it would be advisable to have a test-case in order to settle this most difficult question.

"Only a Penny Herbalist."—For the second time this week, states the *Morning Leader* of February 15, by Mr. J. C. Purdue, the herbalist, was at an inquest on Friday, February 14, a child named Curry having died of burns at Limehouse. The mother called in Mr. Purdue, quite aware that he was not a doctor.—The Coroner: Well, the mother knew you were not a doctor, so there is nothing to say. At the same time it is essential for the welfare of the public that it should be known.—Mr. Purdue handed to the Coroner a bill which read as follows: "A great Blessing from God to His People in the East-end. Herbal Dispensary. Founder and Leader J. C. Purdue. Not a Doctor—Providence has decreed otherwise. Only 1d. Herbalist. No Funds, Gifts, Presents, or Testimonials ever asked for. 'Whatsoever a man soweth, that shall he also reap.'"—The jury returned a verdict of "Accidental death."

Pharmacy Act.—In the High Court of Justiciary, Edinburgh, on Thursday, the appeal case of Bremridge *v.* Smith was argued. This case was originally heard at Glasgow before Sheriff-Substitute Fyfe, the respondent being charged with a contravention of Section 17 of the Pharmacy Act, 1868, in having sold strychnine contained in Fellows' Compound Syrup of Hypophosphites to a person unknown to him, and without making the requisite entry in a poisons-book. The complaint was then dismissed by Sheriff-Substitute Fyfe, on the ground that the Registrar under the Pharmacy Acts has no title to prosecute in Scotland for contravention of the provisions of those Acts. After hearing the arguments the appeal was sustained unanimously by the Lord Justice Clerk, and Lords Pearson and Young, Sheriff-Substitute Fyfe's judgment being reversed and the case remitted to him to be proceeded with.

A Chemist and His Manager.—In the King's Bench Division, on Friday, February 14, the case of Needham *v.* Harris was heard by Mr. Justice Darling. The plaintiff, Thomas Needham, chemist, of Huddersfield, Leeds, and other places, claimed £225, interest at the rate of 5 per cent. on a mortgage, from the defendant, who was formerly the manager of the plaintiff's shop at Leeds. It had been found that a large sum was due from the defendant to the plaintiff. The sum of £500 was agreed upon between the parties, for which defendant executed a mortgage upon an interest he had under his father's will.—The defendant stated that misrepresentation was made to him by the plaintiff, and undue pressure as well—threats of exposure.—His Lordship said he was satisfied that Mr. Needham did not use any kind of threats or any improper means whatever to induce the defendant to sign the deed referred to in the case, and that the defendant thoroughly understood what he was doing.—Judgment was given for the plaintiff for £225 with costs.

TRADE NOTES AND NOVELTIES.

Refreshing Beverages for the Coming Season.—Messrs. Merchant and Co., Essence Distillers, Southport, intimate that they will be pleased to send particulars of their herbal extracts, for preparing herbal beverages, to any reader of the Journal on application being made to them.

Thompson's Patent Dry Closing Cachets.—Messrs. Henry P. Thompson and Co., 93, Aldersgate Street, London, E.C., are introducing a new line in cachets, the chief feature of which is that the necessity for moistening the edges of the cachet is obviated; thus when a dark powder is used no discoloration occurs. Messrs. Thompson and Co. predict a great future for these "dry closing cachets," and they certainly appear to be an improvement on the old style.

"The Chemists' Opticians."—Messrs. Bruce, Green, and Co., Berners Street, London, W., in this week's issue direct attention to their specialties, pointing out the advantages of adopting their system of supplying spectacles and folders, viz.: (1) that no stock is required, however large the business done; (2) the power of sight required is ascertained without waste of time or trouble to the chemist. Particulars as to charges for optical and prescription work will be sent to any reader of the Journal on application being made to the firm.

Coronation Illuminations.—Although some months must elapse before Coronation Day, chemists in all parts of the country will doubtless shortly begin to think as to how they can best decorate and illuminate their premises so as not to compare unfavourably with their fellow townsmen. A postcard addressed to Messrs. Farmer and Co., Blackshaw Works, Lower Tooting, London, S.W., asking for particulars of their block lights and coloured glass bucket lamps, mentioning the *P.J.*, will elicit information which may materially assist them in the matter.

Glycerin and Honey Jelly.—Messrs. Osborne, Bauer, and Cheeseman, 19, Golden Square, Regent Street, W., in this week's issue of the Journal, direct attention to the fact that in future the wrappers and labels of their celebrated preparation, "Glycerin and Honey Jelly," the chief feature of which is claimed to be its entire freedom from the stickiness of honey or the adhesiveness of glycerin, will bear the additional endorsement, printed across in green characters, "Guarantee of genuineness, 'Glymiel' Jelly. Registered Trade Mark. Patent Office, No. 236,270."

Chemist's Own Mineral Waters.—There can be little doubt that the retail mineral water trade is a fairly profitable one, and much more so when the retailer is also the manufacturer. Then why not make your own mineral waters? Messrs. Bratby and Hinchliffe, Limited, Sandford Street, Ancoats, Manchester, have introduced a machine—the "Orient Soda Water Machine"—which is specially suitable for the purpose, being reasonable in price and easily worked. Send for an illustrated catalogue, mentioning the *P.J.*

Wellcome's Photographic Exposure Record, 1902.—Messrs. Burroughs Wellcome and Co. can now supply this book in the Italian language, and with exposure and other tables suitable for use in Italy and other countries on the Mediterranean seaboard. The sale of the English edition has already far exceeded that of all last year's issues. The firm is now reprinting so as to be able to meet further demands without delay. All who require copies should not fail, however, to place their orders at once so as to avoid disappointment.

"Paterson's Xl Chloride of Lime."—The convenience of the retailer now receives a considerable share of the manufacturer's attention, and Messrs. John Paterson and Co., 6, Main Street, Anderston, Glasgow, in preparing "Xl chloride of lime" for sale in penny and two-penny packets have proved to be no exception to the rule. The packets are air-tight, waterproof, and have no perceptible smell about them until opened; then the odorous properties of the contents are evident. Messrs. Paterson state that the packets will keep intact in any climate, and each packet bears full directions concerning the various domestic purposes for which chloride of lime may be employed.

The "Bonsa" Tool-Instrument.—Messrs. Maw, Son, and Sons, 7-12, Aldersgate Street, London, E.C., are introducing a very handy little set of useful tools neatly packed in leather case of a size suitable for the breast-pocket of a coat. While in no sense pharmaceutical, "The 'Bonsa' Tool-Instrument" belongs to that class of articles which are frequently required in all businesses and households., viz., small saw, corkscrew, screwdriver, sprig-bits, etc., the advantage of the "Bonsa" being that although including eight different tools, it occupies very little space. The wholesale price of this compact little tool case is 7s.

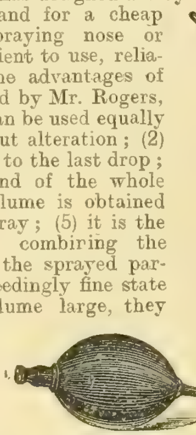
An Improved Throat Spray.—Those who require to use a throat spray occasionally, particularly in hot climates, often find that the rubber ball has perished and has to be renewed before the spray can be used. To obviate that Thompson's Improved Throat Spray, with metal pump and tongue depresser, has been introduced. The pump is practically indestructible; it can be completely sterilised, and may be attached to any kind of spray by means of a small piece of rubber tubing. Particulars as to price will be forwarded by Messrs. Henry P. Thompson and Co., 93, Aldersgate Street, E.C., to any applicant.

Messrs. Burroughs Wellcome and Co. direct attention to their soloids of nitro-propiol, nitro-propiol soloids, gr. $\frac{1}{4}$ (0·016 Gm.), and point out that nitro-propiol is of special value for confirming the presence of glucose in urine, when indicated by other reagents, such as Fehling's solution, inasmuch as the reaction is not influenced by uric acid, creatinine glucuronic acid, bile colouring, or by bodies which may be contained in the urine after the administration of certain drugs. To apply the test, mix 10 minims of the suspected urine with 3 drachms (10 C.c.) of water. Then add one nitro-propiol soloid, and boil. If glucose be present the liquid will assume a blue colour, owing to the formation of indigo blue. This colour may appear quickly, but usually only after boiling for about three to five minutes.

Benger's Essence of Rennet.—This permanent and very active solution of the natural curdling ferment is one of the best preparations for the preparation of whey, junket, etc., since it produces the same effect as fresh calf's stomach, while possessing the advantage of being always ready for use. Whey is frequently of much use in acute diarrhæa or vomiting in infants, and, when used for diluting milk, it forms a food which agrees well when other milk foods fail. The one disadvantage connected with it is that it is not easy to prepare, unless some reliable curdling ferment is at hand. Calf's stomach can rarely be obtained when wanted in a hurry, and is also apt to set up lactic fermentation in the whey unless it is used quite fresh. Essence of rennet, made with brine, is quite unsuitable for preparing infant's food, but Benger's exceedingly active and reliable curdling fluid meets all requirements. It is supplied in bottles to retail at 1s. and 1s. 9d., by the manufacturers, Messrs. F. B. Benger and Co., Limited, Otter Works, Manchester.

A Visit to Maw, Son, and Sons' Showrooms in Aldersgate Street, E.C., always proves to be interesting, there being so much that is new to see, and yet that fact has its disadvantages when one is looking out for something new in the way of novelties, it being difficult to pick out the very latest. At a recent visit "Coronation" (crown stopper) cut-glass perfume bottles in different sizes were the first to be pointed out as absolutely new. They are very handsome and should have a good sale this year. Then the "Bonsa" tool-instrument, referred to elsewhere, was shown, and attention was directed to a special line in feeding cups at from 5s. 6d. to 9s. per dozen. Berber's Hygienic Scrubbing Sponges were described as "something new." These sponges are encased in a hempen net, the idea apparently being to enable an inferior sponge to do the work of one of better quality. They may be had in four sizes at prices ranging from 4s. 6d. to 15s. 6d. per dozen. A "Safety Corn Knife," half a dozen on a card, was said to be new, and a very compact "Invalid's Electric Bell" was stated to have had a large sale this winter. By means of this ingenious apparatus communication can easily be established between a sick room and any part of the house. The foregoing are only a few of the numerous new "lines" that are to be seen at Messrs. Maw, Son, and Sons' showrooms.

Rogers's No. 1 Spray.—Mr. Frank A. Rogers, chemist, 327, Oxford Street, W., has designed a very handy little instrument to meet the demand for a cheap spray, adapted for spraying nose or throat, which is convenient to use, reliable, and effective. The advantages of this spray, as enumerated by Mr. Rogers, are as follows:—(1) It can be used equally for nose or throat without alteration; (2) the solution can be used to the last drop; (3) gives entire command of the whole spray; (4) a larger volume is obtained than with any other spray; (5) it is the cheapest spray made, combining the above advantages; (6) the sprayed particles, being in an exceedingly fine state of division and the volume large, they can be inhaled right into the lungs if necessary. The spray is neatly packed in a cardboard box, together with a wire for cleaning the spray, and one of Rogers's antiseptic handkerchiefs for wiping the part of the spraying apparatus which has entered the nose or mouth. These handkerchiefs are saturated with a non-poisonous germicide, and are very convenient for the removal of sputa, etc., in infectious cases; they may be obtained in boxes of 25, 50, or 100, at 1s., 1s. 6d., and 2s. 6d. respectively.



A New Sundries House.—The firm of Henry P. Thompson and Co., 93, Aldersgate Street, London, E.C., is comparatively young, having commenced business in July, 1901, but it has every appearance of "forging ahead" and of soon taking a place in the front rank amongst those wholesale houses supplying druggists' sundries. The principal partner in the firm, Mr. H. P. Thompson, who was for many years intimately connected with the old-established firm of Maw, Son and Thompson, is thoroughly acquainted with his business and with the requirements of chemists, and the firm has secured the sole agency for Europe of several well-known American and other firms, including Messrs. Bauer and Black, Chicago, manufacturers of medicinal and surgical plasters, absorbent cottons, surgical dressings, suspensories and chest protectors; the Enterprise Soap Works, Nashville, Ten.; the Requa Manufacturing Co., New York; Magda Toilet Cream, Countie of Boston; Evan's Violet Talcum Powder, Philadelphia; Patent Dry Closing Cachets, etc. The leading lines of the firm, apart from the products of the foregoing manufacturers, are English and American dispensing and other bottles of the very best quality, including a new line of cut smelling-salt bottles, specially made for Coronation year, and special patterns in flint perfume sprays; rubber goods, including a full line of the Davol Rubber Co., Providence, R.I., a special line of black enemas, each in box, guaranteed for three years, at 16s. per dozen, and other lines specially adapted for hot climates; oil atomisers, sprays, etc., tooth brushes in all qualities; tooth pastes in 6d. pots, red or white cherry, carbolic, etc.; oiled silk of superior quality in convenient sized packages for retailing; a special line in toilet soaps—"Crushed Carnations," etc.—in 6d. tablets, and good cheap tar soaps; 6d. boxes of ladies' toilet pumice, giving a good profit; clinical thermometers, etc. Among the goods for which Messrs. Thompson and Co. hold the sole European agency those of Messrs. Bauer and Black are well worth the attention of chemists, particularly the suspensories and plasters, which latter for flexibility and even distribution can hardly be surpassed. In addition to the quality of the articles, which is all that can be desired, the general get-up shows that considerable time and thought has been given not only to displaying the goods to the best possible advantage and in accordance with hygienic and aseptic principles, but also to the convenience of the retailer, no point appearing to have been overlooked. A very good 6d. line for this season of the year, and one bearing a good profit, is Requa's cubeb cigarettes for influenza, difficult breathing, catarrh of the head and throat, etc. The cigarettes are packed in a cash box, with lock and key, containing three dozen packets of twelve, at 12s. per box. Evans's violet talcum toilet powder in 1s boxes should be another good line, as the article is being widely advertised in domestic and other magazines. The "Rex Porous Plasters" are also a profitable line. In fact Messrs. Thompson and Co. have recognised that to establish a good business reputation it is necessary not only to do as well as others, but to go one better. Fuller particulars of the goods for which they are agents will be forwarded to any applicant on mentioning the *Pharmaceutical Journal.*

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

Martin James Richardson and Arthur William Robertson, general medical practitioners, Gosport, Hants.

George William Hanson Beaman, Harris Samuel Beaman, and William Sutton Wyman, trading as the Spa Road Beverage Company, manufacturers of mineral waters, ginger beer, etc.

DIARY OF THE WEEK.

Tuesday, February 25.

Bradford Chemists' Association.—"Pharmacy," by J. Harrison (Sunderland).

Huddersfield Chemists' Association, Queen's Hotel, at 6 p.m.—Inaugural Dinner.

Wednesday, February 26.

Chemists' Managers' and Assistants' Society, Horse Shoe Hotel, Tottenham Court Road, W.C., at 9 p.m.—"General Position of Chemists' Managers and Assistants," by R. E. Wright.

Junior Pharmacy Ball, Portman Rooms, Baker Street, W.

Public and Poor-Law Dispensers' Association, St. Bride's Institute, Bride Lane, E.C., at 8 p.m.—Usual Monthly Meeting.

Thursday, February 27.

Barnsley and District Chemists' Association, Royal Hotel, at 6.30, p.m.—Discussion on "The Social Status of the Chemist."

Chemists' and Druggists' Society of Ireland, Whitehall Buildings, Ann Street, Belfast, at 7.30 p.m.—Annual Social Re-union.

Chemists' Assistants' Association, 73, Newman Street, London, W., at 8.30 p.m.—Discussion on "The Best Systematic Methods for the Pharmacist."

North-East Lancashire Chemists' Association, White Bull Hotel, Blackburn, at 6.30 p.m.—Annual Dinner.

Reading Chemists' Association.—"The Chemist as a Mechanic," by F. F. A. Tunbridge Pike.

Saturday, March 1.

Inter-Pharmacy Football League.—Metros. *v.* Square.

Royal Institution, Albemarle Street, Piccadilly, W., at 3 p.m.—'Some Electrical Developments" (Lecture III.), by Lord Rayleigh.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Alcock, Andrews, Barrie, Bradbury, Braithwaite, Browning, Cope, Crook, Cummings, Davies, Doble, Dott, Downing, Ellis, Ferrall, Forret, Forshaw, Foster, Hardwick, Heddle, Hill, Hirsch, Horowitz, Jarrett, Kean, Marrett, Maxwell, Moore, Mowatt, Nelson, Nundy, Pears, Philp, Pickworth, Ramsay, Rigby, Roe, Ryley, St. Cyr, Sankey, Thorne, Turner, Walshaw, Williams, Wood.

MARKET REPORT.

London, Thursday, February 20, 1902.

Business in Drugs and Chemicals has again been by no means active during past week, while the general complaint is that on such business as is doing little or nothing can be made. The speculative market for Quinine has hardened somewhat, as a result of the quite moderate shipments of Cinchona Bark advised from Java for first half of the present month. The opium market has been upset by the large importations of Persian, which kind has, for manufacturing purposes, at any rate, practically for the time ousted the other varieties. Morphine has also been depressed from the same cause. Codeine remains firm. Acid Carbolic quiet, but fairly steady. Cod-liver Oil tending upwards. Glycerin also looking up. Cream of Tartar lower. Acid Tartaric and Acid Citric easier. Mercurials firm and unchanged. Bromides continue in good demand. Iodides without change. We give below a few prices.

ACID CITRIC—Is easier at 1s. 0½d. to 1s. 1d. per lb., according to quantity and make for crystals in 5 cwt. barrels.

ACID TARTARIC—Is weak, and easier at 11¼d. to 11½d. per lb. for English, and 10½d. per lb. for foreign.

BROMIDES—Continue in good demand at unchanged prices.

CINCHONA BARK.—The shipments of Bark from Java for first half of February were advised as 320,000 Amsterdam lbs., against 525,000 Amsterdam lbs. last year and 180,000 Amsterdam lbs. in 1900.

COCAINE—Is quiet, but fairly steady, at 17s. 9d. to 18s. 3d. per oz., according to quantity for the Hydrochlorate in 25-oz. tins.

CODEINE—Is firm and unchanged.

COPPER SULPHATE—Is quoted £19 per ton on the spot.

CREAM OF TARTAR—Lower at 70s. per cwt. for first white crystals on the spot, 72s. per cwt. for powder, and 73s. 6d. per cwt. for foreign 98 per cent. ditto.

IODIDES—Are unchanged.

LITHIA SALTS.—The struggle between the rival makers continues, and still lower prices are looked for. It is stated that the Carbonate is being offered in quantity at 5s. 6d. per lb.

MENTHOL—Is still tending downwards, price for Kobayashi being nominally 14s. to 14s. 3d. per lb., according to quantity.

MORPHINE—Is dull and weak at nominally unchanged price.

OPIUM—Is dull and weak, the large offers of Persian, down to 8s. 3d. per lb. for fair quality, having quite upset the market. Things are now rather better, and it is not possible to buy good Persian below 9s. per lb.; still, a very low price, however, bearing in mind that a few months ago fine Persian was selling at 14s. 6d. to 15s. per lb.

PHENACETIN—Is lower, there being offers in the market at 4s. 1½d. per lb. for both crystals and powder.

QUININE.—Makers of the favourite B&S and Brunswick brands still quote 1s. 2d. per oz. for the Sulphate for 1,000 oz. lots in 100 oz. tins, while in the speculative market price is decidedly firmer at 1s. 1⅞d. to 1s. 2d. per oz. for above-named brands for June delivery.

SANTONINE—Is still quoted 16s. 9d. per lb. for 2-cwt. lots. A possible advance is however being discussed in consequence, it is stated, of an export duty on the article in Russia.

SHELLAC—Has been in steady demand on spot on basis of 121s. 6d. to 122s. 6d. per cwt. for TN.

SPICES.—Cloves: Zanzibar taken out at 4d. for good fair, and fair Amboyna at 5¾d. 12 cases Penang sold, fine bright bold picked, at 10d. Ginger: Cochin in moderate supply mostly bought in, medium and small cut and scraped, at 67s., and brown Calicut rough at 45s. Japan: 100 bags limed taken out at 42s. Chillies: 92 bags Japan sold, good bright at 37s. to 38s. Capsicums: 55 packages Bombay bought in at 30s.; of 30 bags Egyptian, 2 sold, long dull red off-stalk at 27s. Black Pepper practically all bought in, Singapore at 6d. to 6⅛d., and Aleppy at 5⅞d. to 6d. White Pepper all bought in, Singapore at 10⅛d., Penang at 9¾d. Cinnamon: 23 bags Ceylon sold, fair cuttings at 8d. to 9d., quillings and featherings at 6d. to 6½d. Mace quiet: 6 cases dull Penang bought in at 1s. 4d. Pimento in large supply and no demand; 1,384 bags all bought in at 2¾d. to 3d.

SULPHONAL—Continues dull and weak at 5s. per lb. for crystals, and for powder for quantity and bulk packing.

THYMOL—Has had a slump, and there are sellers of quantity at 7s. 6d. to 7s. 9d. per lb.

THURSDAY'S DRUG SALES.

To-day's Drug Auctions comprised 16 catalogues, which were, however, all very short ones. Asafetida was in large supply, in all about 800 packages were offered, weighing together about 38 tons; only quite a small proportion, however, consisted of really good quality. We give particulars below.

ALOES.—31 cases Cape did not sell. 5 kegs fair Socotrine sold at 72s. 6d. per cwt.

AMBERGRIS.—1 tin of fair quality realised 92s. 6d. per oz.

ASAFETIDA.—139 packages sold readily at 57s. 6d. per cwt. downwards, according to quality. Other 284 packages sold at 70s. per cwt. downwards. Other 386 packages only part sold at 80s. per cwt. downwards.

BALSAM TOLU.—10 cases all sold at 1s. per lb.

BUCHU LEAVES.—Of 26 bales only part sold at 7½d. per lb. for inferior yellow rounds.

CALUMBA ROOT.—6 bags sold at 17s. 6d. per cwt. for good sorts.

CARDAMOMS.—48 cases Ceylon Mysores sold at 2s. 10d. to 3s. per lb. for fine bold downwards. 27 cases ditto Malabars only part sold at 1s. 6d. to 1s. 7d. per lb. 21 cases seed realised 1s. 9d. to 1s. 10d. per lb. for fair. 1 case fair wild seed sold at 1s. 6d. per lb., subject to owner's approval. Other 15 cases sold at 2s. 7d. per lb. for fair long pods. Other 21 cases Ceylon sold at 2s. 5d. per lb. down to 1s. 7d., 1s. 5d., and 1s. 3d. per lb. for splits 1, 2, and 3 respectively. Other 15 cases fetched 2s. 11d. per lb. for fair bold downwards. Other 78 cases sold at 2s. 6d. per lb. downwards.

CINCHONA BARK.—14 serons Crown bark sold at 1s. 2d. to 1s. 5d. per lb. for good, 2 serons only realising 6¼d. per lb.

COCA LEAVES.—5 bags Ceylon of inferior quality only fetched 6d. per lb.

ESSENTIAL OILS.—5 cases Kingscote Eucalyptus oil were taken out at 1s. 2d. per lb. Other 35 cases, showing on Parry's analysis 62 per cent. Eucalyptol, also failed to find a buyer.

GUM BENZOIN.—16 cases Siam part sold at £24 per cwt. for good bold almondy part blocky, and at £15 10s. to £16 10s. per cwt. for fair ditto. Of 49 cases Sumatra 5 cases sold at £6 10s. and 5 cases at £6 per cwt. for medium thirds. Other 75 cases part sold at £9 to £9 5s. for good to fine seconds. 107 cases Palembang did not sell.

GUM ELEMI.—10 cases were taken out at £6 per cwt. for fair pale quality. Of other 10 cases 5 cases sold at 95s. per cwt.

HONEY.—111 packages Jamaica part sold at 16s. per cwt. for barrels, and at 16s. to 22s. per cwt. for tins and cases.

IPECACUANHA.—28 bales Rio did not sell, 10s. 6d. per lb. being price mentioned. Other 9 bales ditto part sold at 9s. 10d. to 10s. 1d. per lb. for sound and at 9s. 8d. per lb. for SD. 8 bags Carthagena of poor quality were bought in at 4s. 6d. per lb. Other 12 bales ditto part sold at 4s. 6d. per lb.

MUSK.—1 tin nett 88 ozs. Cabardine sold at 11s. 6d. per oz.

OPIUM.—2 cases sea damaged Persian sold, without reserve, at 7s. 6d. and 8s per lb. respectively.

RHUBARB.—Of 20 cases good round Canton sold at 1s. 9d. per lb., 3 cases flat ditto at 1s. 5d. per lb., 2 cases flat and round selling, subject to owner's approval, at 1s. per lb. Two cases fine round realised 2s. 5d. per lb. 1 case flat ditto was taken out nominally at 3s. 6d. per lb. 10 cases good high-dried part sold at 9d. per lb.

SARSAPARILLA.—34 bales Jamaica part sold at 1s. 3d. per lb. for the 1 CCD. Of other 47 bales only 1 bale 1 CCD sold at 1s. 1d. per lb. 3 cases sold at 9½d. per lb. for red native Jamaica in rolls, and at 8½d. per lb. for brownish ditto. 16 bales Lima sold at 1s. 3d. per lb. for the sound and 1s. 1d. to 1s. 2d. per lb. for 1 and 2 CCD.

SENNA.—10 bales low common Tinnivelly only fetched ¾d. per lb. Other 38 bales, also consisting of poor stuff, sold at 1¼d. per lb. downwards.

TONQUIN BEANS.—1 box Paras, nett 33 lbs., sold at 1s. 11d. per lb.

TURMERIC.—Of 50 bags Bombay 20 bags sold at 19s. per cwt. for dull finger.

WAX.—10 packages Zanzibar part sold at £6 15s. per cwt., subject to holder's approval. 5 bags Australian sold at £51 7s. 6d. per cwt., 1 bag New Zealand at £6 10s. per cwt. 72 mats Madagascar realised £6 12s. 6d. to £6 15s. per cwt. 2 packages Jamaica sold at £8 10s. per cwt.; 1 barrel ditto at same figure.

MONEY MAKING ADVERTISING

LEE'S ADVERTISING AGENCY, LTD.

26, LUDGATE HILL, LONDON, E.C.

And 21, Princes Street, Ipswich.

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Are prepared to advise on all matters connected with every description of advertising. That they are experts is proved by the success which has attended the efforts of all their clients. If you are thinking of Advertising,

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to Lee's Advertising Agency, Lim., who will afford you every information; or they will keep any appointment at any distance (free of cost to you) at short notice. That our system is what it claims to be is proved by our largely increased and increasing turnover, which is now more than ***ten*** times the amount of twelve months' since. Our clients admit that they have learnt from Lee's the art of

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Just published, the 2nd Edition of our little work, "**Money Making Advertising**," 56 pages of interesting facts and advice as to advertising generally. 56 pages and not one advertisement from cover to cover. Write and we shall be pleased to send you a copy, post free, by post.

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49, Haymarket, London, S.W.

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Pharmaceutical SPECIALITIES and

PROPRIETARY MEDICINES

WINES and PERFUMES.

Goods not in stock procured to order at short notice.

FOREIGN PRESCRIPTIONS are dispensed for the trade The scrips are not stamped

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of selling Proprietaries at cost price should buy Rouse's Concentrations, which give the maximum of profit and the minimum of trouble on the smallest initial outlay.

ROUSE'S CONCENTRATIONS.

COLOGNE ESS. for Cologne, Myrrh and Borax, Cologne Brilliantine, &c
BAY RUM ESS. for Bay Rum, B.R. and Cantharides, B.R. and Quinine
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ESS. DENTIFRICE for Eau Dentifrice and Carbolic Mouth Wash.
EUCALYPTUS COLOGNE ESS. for Eucalyptus Eau de Cologne.
FLORIDA WATER ESS. for Florida Water.
ESS. LAVAND. for Lavender Water, Lav. Smelling Salts, Lav. Liquid Soap, Lavender Brilliantine.

The above Toilet Waters can be prepared at about 3/- a pint (Bay Rum 2/4), from these Concentrations, which are supplied in 1 oz. bottles (for 1 pint), 1/6, 4 oz. 5/6, 16 oz. 18/- post free. Labels and formulæ are given for all the preparations mentioned. Showcard with each bottle.

ROUSE BROS., 61, Charlotte St., LONDON, W.

HERBERT J. BULT, F.C.S.

Consulting and . .
Analytical Chemist.

City Office and Laboratory:

18, BILLITER STREET,
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DISINFECTANTS

The "Sanitas" Co., Lim.

are the exclusive Manufacturers of the well-known Non-poisonous

'SANITAS' PREPARATIONS

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"SOLDIS," "OKOL," "CREOCIDE," "FORMITAS," "KINGZETT'S PATENT SULPHUR FUMIGATING CANDLES," "SULPHUGATORS," "FORMIC SULPHUGATORS," "FORMIC AIR PURIFIERS," "FORMIC FUMIGATORS," KINGZETT'S PATENT DRAIN TESTERS, SHEEP DIPS, WEED KILLER, PATENT PRESERVED PEROXIDE OF HYDROGEN, INHALERS, DISINFECTORS, FUMIGATORS, BRONCHITIS KETTLES, and other Sanitary and Disinfecting Appliances.

Full Catalogue and "How to Disinfect" Book will be sent free on application to—

THE "SANITAS" CO., Ltd., Bethnal Green, LONDON, E.

Antitoxine is the only Anti-pyretic and Anti-neuralgic which has been demonstrated by the Sphygmograph to be a powerful heart stimulant.

NET PRICE:—Reduced to 3/- per ounce for Powder and 5-grain Tablets.

Dear Sir, Amesbury, Salisbury, Wilts.

In reply to your letter asking my opinion of Antitoxine, I have much pleasure in saying that in Migraine and certain Neuralgias of the face I have found the drug almost a specific, and in every case there has never been any sign of cardiac depression, rather the reverse; a "feeling of warmth all over the body," as they have expressed after taking it. I always have it in my surgery, for use in the cases above-mentioned, having up to the present used several ounces of it. Just now I am exhibiting it in a patient with high fever from Acute Cystitis, and have every confidence that it will act as an antipyretic in conjunction with other drugs appropriate for this disease. You may make use of my name if you wish it, as I think the drug should be more popularly known by the Medical Profession.

I remain,
(Signed) Yours faithfully,
HENRY BROWNE, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A. Lond.

The British Antitoxine Manufacturing Co.,
31, Snow Hill, London.

"THE ONLY FILTER."

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PASTEUR

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"A real preventative of Typhoid."
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Silvery and Royal Caskets of TEA & SILK MUFFLERS Free.

We pack one pound of delicious **Silvonah Tea** in these splendidly designed, **Embossed Silvery or Royal Caskets**, including one of our **Finest White Silk Mufflers**, for 4/-, sent carriage paid. These Mufflers are very beautiful, and could not be sold at the price but that they are specially imported and offered at merchant's prices. If six ordered we present one Muffler free.

FRANK BEVAN & CO., **Tea and Silk Merchants,**
50, MARK LANE, LONDON, E.C.

Pharmaceutical Journal

INSET.

SATURDAY, MARCH 1, 1902.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

ILKLEY.—Competent Junior ASSISTANT for good-class family and Dispensing; indoor.—Full particulars to G. W. WORFOLK, Ilkley.

DISPENSER, qualified (outdoor), salary £2 5s. per week.—State age, experience, and enclose photo, to WAND, Haymarket, Leicester.

QUALIFIED ASSISTANT required in first-class Dispensing business; state experience.—Apply, SAVORY & MOORE, 86, King's Rd., Brighton.

WANTED, part time ASSISTANT; one or two evenings and afternoons a week; good writer; also Qualified Junior, Mch. 20.—TUPHOLME, Coleherne Terrace, Earl's Court, London.

QUALIFIED ASSISTANT wanted, of gentlemanly manners and address; age about 26; indoors; two kept.—Apply, R. C. HARRISON, Pharmacist, Lee Green, S.E.

JUNIOR in a first-class West-End business, must have had a good apprenticeship and write well.—Apply, with full particulars, to J. W., c/o Barron, Harvey & Co., Giltspur St., E.C.

CAPE COLONY.—Wanted, a qualified ASSISTANT; Minor; progressive salary; passage paid.—Apply, with full particulars, J. C. H., c/o Hewlett & Son, 40, Charlotte St., E.C.

DISPENSER and BOOK-KEEPER, Gentleman wanted at end of March; hours, 9 to 1; 2.30 to 4.30; 6.30 to 8.30.—Apply, with usual particulars, to Drs. PILCHER and WILSON, Boston, Lincs.

KENSINGTON.—About 20th March; JUNIOR, 22, with Dispensing experience; indoors; abstainer preferred.—Usual particulars, with photo, to R. S. DAMPNEY, 70, Warwick Rd., Kensington, S.W.

PORTER, from 20 to 25 years of age, accustomed to the Trade, willing to make himself generally useful; liberal wages.—Apply to Messrs. COOPER & Co., 80, Gloucester Rd., South Kensington, S.W.

COMPETENT qualified ASSISTANT for first-class Retail and Dispensing Business; of good address.—Reply, enclosing carte with full particulars, T. CHASE, Pharmaceutical Chemist, Edgbaston, Birmingham.

WANTED, a qualified ASSISTANT, about 23, to manage a small branch business.—Send fullest particulars and enclose photo (to be returned) to C. C. H., c/o Messrs. Woolley, Victoria Bridge, Manchester.

QUALIFIED ASSISTANT wanted for good class retail and dispensing business, knowledge of Photography preferred. —State age, height, experience, salary required, etc., to J. C. SHENSTONE, 13, High St., Colchester.

Assistants Wanted—Continued

DURBAN.—Qualified ASSISTANT wanted; salary £15, £16 10s., and £18 per month for 1st, 2nd, and 3rd years respectively, agreement to be signed; room supplied, but not board.—Apply, R. F., c/o Pharm. Journal Office, 8, Serle St., W.C.

MAIDSTONE.—Indoor Junior ASSISTANT about 21 wanted, for good class Retail and Dispensing Business; 3 kept. —Apply, stating the usual particulars as to age, height, references, salary and photo, to STONHAM & SON, Maidstone.

GOOD JUNIOR wanted, not under 22, accustomed to high-class Dispensing and Retail; indoors; abstainer preferred. —State experience, salary required, and enclose photo, or apply personally, R. H. PARKER, 35, Clifton Rd., Maida Vale, W.

LAKE DISTRICT; end of March; ASSISTANT in good class Retail, Dispensing and Agricultural business.—State usual particulars as to age, height, experience, salary outdoors, and if convenient enclose carte, BANKS SWINBURN, Chemist, Penrith.

WHOLESALE, Junior CLERK.—Wanted by a firm of London Wholesale Druggists, a Junior CLERK accustomed to the trade.—Give full particulars, references and salary required to DRUGS, Pharm. Journal Office, 8, Serle St., Lincoln's Inn, W.C.

OUTDOOR SENIOR for a light retail Dispensing and Prescribing Business; hours easy; no Sunday duty; half day a week off; good salary to one seeking a permanency; qualified preferred.—HENRY FLANDERS, Dispensing Chemist, Mill Road, Cambridge.

QUALIFIED ASSISTANT wanted, early in March; indoor; must be accustomed to a quick retail and Dispensing trade; about 24 or 25 years of age.—Please state salary required, experience, &c. No one need apply unless a permanency is required.—Apply THOMAS, 107, Talbot Rd., Bayswater, W.

REQUIRED in a few weeks' time an outdoor qualified ASSISTANT speaking French fluently; suitable vacancy for an assistant, aged about 25, returning from the Riviera, who has a fair knowledge of international pharmacy.—Address, stating fullest particulars as to experience, height, and salary required, PHARMACIST, Pharm. Journal Office, 8, Serle St., W.C.

LADY Dispenser wanted at once, at the Gore Farm Lower Hospital (Small-pox), Dartford, Kent (under the Metropolitan Asylums Board). A temporary appointment. Salary £100 per annum, rising to £120, with board, lodging, and washing, for which a deduction from salary of 10s. a week will be made.—Apply to the Medical Superintendent, by letter, with copies of testimonials.—Feb. 26, 1902.

Assistants Wanted—Continued

CAPE TOWN.—Qualified Assistant wanted for firm of Chemists; not over 25 years of age; salary £12 per month first year, £13 10s. second, and £15 third year; room supplied, but not board; second class passage paid; 3 years' agreement.—Apply, stating experience to P. J. P., c/o Messrs. John Murdoch & Co., 52, Leadenhall St., E.C.

CALCUTTA.—Wanted at once, a qualified Assistant; age about 24 years; must be able to conduct analysis; first-class opening for a competent man. Salary, 1st year, 275 Rs. per month; 2nd year, 300 Rs. per month; 3rd year, 325 Rs. per month, and 4th year, 350 Rs. 4 years' agreement. Second class passage paid both ways.—Apply by letter to Calcutta, c/o Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

INDIA (N.W. Province).—Wanted, a good Assistant, well up in all branches of a Chemist's business; Minor qualification. Salary, 1st year 150 rupees per month, 2nd year 175 rupees per month, 3rd year 200 rupees per month; free furnished apartments; second-class passage paid out; required to start early in April; candidates must hold undeniable references.—Address, India, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.

WANTED, an Assistant Dispenser; must be fully qualified; salary £75 per annum, with mid-day meal.—Applications, with testimonials, to be received by Thursday, 6th March.

E. FORSTER,
House Governor and Secretary.
Wolverhampton, 25th February, 1902.

CAPE COLONY.—Wanted, good Assistant, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £150; second year, £160; third year, £170; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, Cape, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified Assistant; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to Straits Settlements, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

SANITARY INSPECTORSHIPS.—Salaries £100 to £250. Numerous vacancies. Permanent appointments. Chemists or Assistants desiring change of occupation should qualify as Sanitary Inspectors. Special Postal Course of Lessons now commencing for London, Liverpool, Leeds, Cardiff, Manchester, Leicester, Newcastle-on-Tyne and Belfast exams. Anyone of average ability can pass. Had over 250 successful candidates, and fully half had no previous knowledge of sanitary matters.—Apply, Robert H. Mushens, Sanitary Science Teacher, Sunderland.

TAUNTON AND SOMERSET HOSPITAL.

WANTED, on or about the 27th April next, a qualified Dispenser (non-resident), at a salary of £100 per annum; hours 9 a.m. to 6 p.m.; a boy kept to assist.—Written applications, stating qualifications and age (not over 40), with testimonials (limited to three) as to character and experience, to be sent on or before Wednesday, the 19th March, to the undersigned,

J. E. W. WAKEFIELD,
Hon. Secretary.
Dated Taunton,
26th February, 1902.

Assistants Wanted—Continued.

LONDON HOSPITAL, WHITECHAPEL, E.

A GENTLEMAN is required to act as Manager of the new operating theatres about to be opened at this hospital. He must have had some scientific training, such as is required to pass the Major Examination of the Pharmaceutical Society; he will be expected to have an acquaintance with the principles of bacteriology; he will have control, under the present Superviser, of a large staff of theatre assistants; it will be his duty to see that these theatre assistants perform their work with the precautions necessary in aseptic and antiseptic modern surgery; he will also be responsible for the proper keeping of the instruments in the various theatres. Hours from 9 to 6; salary, to commence, £150 per annum, with lunch.

Four qualified Dispensers are also required; they will be expected to attend in the operating theatres at certain times of the day. Hours, 9 to 6; salary, to commence, £100 per annum, with lunch.

Applications for these appointments are to be made, by letter in the first instance, to Mr. E. W. Morris, London Hospital, E.

Apprentices

LONDON, W.C.—Wanted, intelligent gentlemanly youth as Apprentice; outdoors; dinner and tea found; exceptional opportunity for acquiring all-round knowledge of the business; premium.—Haynes, Chemist, Southampton Row, London, W.C.

Tenders

GUY'S HOSPITAL, S.E.

THE House Committee invite Tenders for the supply o Drugs, Chemicals, and Surgical Dressings, for twelve months, from April 1st, 1902. Further particulars, with Form of Tender, may be obtained on application at the Superintendent's Office. Tenders, duly sealed, are to be sent to the Superintendent's Office not later than March 8th.

CARDIFF UNION.

THE Guardians invite Prices for Six Months' Supply of Drugs, &c., for the Union Workhouse Dispensary and Outdoor Dispensary, 52, Charles St., Cardiff.

Persons desiring to quote must send their current price list of Drugs to me not later than 6 p.m. on Saturday, 8th March, 1902, and must state the maximum discount they will be prepared to allow off the list of prices of the Drugs to be supplied.

ARTHUR J. HARRIS, Clerk.
Union Offices, Queen's Chambers, Cardiff,
25th February, 1902.

Shop Fittings for Sale

CHEMIST'S Side Fittings, from £1 foot run. Counters from 7s. 6d. foot run. Counter Cases from 7s. foot run. Dispensing Screen, 6 ft. long, £6 10s. Plate-Glass Shelves, polished edges, standard bars and brackets. Cheapest house for blinds, mirrors, shelves, lamps, and window fittings.—**TREBLE & Co.**, Complete Shop Fitters, **RECTORY WORKS, RENDLESHAM ROAD, CLAPTON, LONDON, N.E.**

Shop to Let

CHEMIST'S Splendid Opening.—Spacious Shop with plate-glass front; main road, busy and rapidly increasing neighbourhood; all adjoining shops let to old tenants; large bank in same block; excellent opportunity as branch business; rent £100; direct from owner.—View, 2, Bank Building, West Kensington (close to station). Note.—Chemist's shop recently absorbed by bank for extension.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM, Qualified, Abstainer.—E. KEMP, 11, Cheapside, St. Leonards-on-Sea.

LOCUM, M.P.S.; town or country; disengaged.—W. SMITH, 12, Westfield Rd., Surbiton.

ASSISTANT; 25; 8 years' experience; disengaged; outdoors.—H. 17, Granville St., Dover.

PART-TIME. — Towards evening, within easy distance.—Address B., 23, Calthorpe St., W.C.

QUALIFIED; good experience; disengaged; outdoors preferred.—H. LEWIS, Sterte House, Poole.

EVENINGS.—Private coach to Minor, Apothecaries' Hall Students.—M.P.S., 253, Burdett Rd., E.

LADY, Minor Qualification, desires engagement.—MISS FOX, Stoneleigh, Liverpool Rd., Newcastle, Staff.

PERMANENCY; married, experienced, reliable; references; tall; disengaged.—CHEMICUS, Mertonville, Park Avenue, Worcester.

MAJOR; 26; Dispenser or Laboratory; time for study; outdoors; good experience.—CLARKSON, 31, Angell Rd., Brixton, S.W.

UNQUALIFIED; 32; 15 years' experience; Photography; good references; East Coast preferred.—W. L. FFRENCH, 7, West Stockwell St., Colchester.

MANAGER; qualified; 26; good varied experience; references *re* past managerships; Provinces; permanency.—STATIM, Sheppenhall Hall, Aston, Nantwich.

LOCUM TENENS; days, weeks; moderate; reliable; engagements booked forward.—T. C. BEACH, M.P.S., Windsor Edge, Inchbrook, Stroud, Glos. Telegrams: Beach, Nailsworth.

BRANCH MANAGER or LOCUM; qualified; 37; Store experience and West-end; Extractor, Prescriber, and knowledge Photography; excellent references.—STATIM, 140, Kennington Park Rd.

WIDOW (34) desires engagement as Housekeeper to 1 or 2 gentlemen. Good cook; capable manager; thoroughly domesticated; highest testimonials.—DISENGAGED, 96, Clapham Rd., S.W.

ITALIAN Assistant, speaking French fluently and little English, desires Situation in England; age 24; good references.—Apply, T. FAVRETTI, Pharmacie Internationale, Bordighera, Italy.

DISPENSER and BOOK-KEEPER to Surgeon, Chemist, Dispensary or Institution; mornings, evenings; part time or otherwise; qualified; experienced; excellent references.—SALICINE, 8, Serle St., W.C.

Partnership

A MINOR wanted, to go into PARTNERSHIP with a smart French Pharmacist (qualified) in order to purchase a Pharmacy in the French Riviera; £1,500 wanted for his part; some knowledge of the French language requisite; splendid opening.—Apply RIVIERA, Pharm. Journal Office, 8, Serle St., London, W.C.

Business Wanted

WANTED, a good-class Retail BUSINESS in small country town (Midlands preferred); must have good house attached. Capital £1,000.—Address, CORTEX, Messrs. Southall Bros. & Barclay, Birmingham.

CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., CHEMISTS' TRANSFER AGENTS, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

The Business conducted by MESSRS. ORRIDGE & Co. has been known as a Transfer Agency in the advertising columns of the PHARMACEUTICAL JOURNAL since the year 1846, and is well known to all the leading firms in the Trade.

VENDORS have the advantage of Messrs. O. & Co.'s direct attention and advice as to value without any additional fees.

PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

Terms for Valuation on application.

THOMAS TOMLINSON & SON

Chemists' Transfer Agents and Valuers,

9, NEW CANNON STREET, MANCHESTER.

VENDORS saved time and trouble by consulting before offering for sale. PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address,* "TOMTOM."

Businesses for Disposal

KENT.—In best central situation of county town, a small profitable Retail and Prescribing BUSINESS. Old-established, with new front; price £300.—Apply, CURA, Pharm. Journal Office, 8, Serle St., W.C.

CHEMIST and Dispensing BUSINESS; in hands of present proprietor for nearly 30 years; state of health reason for wishing to retire; splendid position.—Address, F. LYON DEWAR, 39, Forrest Rd., Edinburgh.

£550 CASH; returns average over £1,000 per annum; as a Branch, in the centre of a large mining population, with a paying Gilbey's Agency, and fine scope for an energetic principal; rent £30.—Apply, STAFFS, Wyleys, Limited, Coventry.

OLD-ESTABLISHED Chemist's BUSINESS for sale; large house; corner shop in main business street of market town (population 12,000) in South of England; rent £60; price £150 or reasonable offer.—For full particulars, apply, HYDROGEN, 8, Serle St., London.

£1,000, NEARLY half gross profit.—Old-established good-class Retail and Dispensing; under management past five years; handsomely fitted Pharmacy, fully stocked; convenient house (part let off), leaving six rooms, offices and shop, £31 per annum; situated N.W.; price £850, or £260 goodwill and valuation; no agents.—SPECIAL, 8, Serle St., W.C.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Offers for 4doz. Welch's Invalid Port. Non-Alcoholic.—Ryley, Lowgate, Hull.

Wanted, London Latin Pharmacopœia, 1851.—F. James, Highbury, Hitchin, Herts.

Platinum Utensils and scraps for cash.—P. Rowsell, 9, Derwent Grove, Dulwich.

Strassburgher's "Botany," Ganot's; state lowest price, date.—Hensman, c/o Jeffries, Chemist, Putney.

Attention! Examine your old stocks! Wanted, Churchill's spirone; also sprayer.—Kershaw, 22, Clifton Terrace, Brighton.

Autograph Prescriptions (for reading as practice).—State price to "Student," c/o E. Beck, 54, Rodsley Avenue, Gateshead.

Wanted, Good Secondhand Mahogany showcase, 42in. long, 57in. high (not more), 2 doors; cheap for cash.—Cooper, Sawston, Cambs.

OFFERED.

Lancet, 1901-1902, unbound; 1886-1897, bound, 6s.—88, Sussex Rd., Holloway.

50 G. B. Kent (Brushes) 5½ per cent. Preference, price 22s. 3d.—O., 39, Quentin Rd., Lee, S.E.

150 Idris B 7 per cent. minimum Preference, price 23s. 9d. each.—M., 30, Tranquil Vale, Blackheath, S.E.

Photographic Mounts. 2,500 cabinets, 25s.; 2,000 C.D.V.'s, 7s. 6d. to clear.—Edward Peck, East Dereham.

Pharmaceutical Journal, 1892-1901 (nearly complete), mostly unopened; what offers, to clear at once?—Beal, "The Elms," Aldboro' Rd., Ilford.

Bagatelle Board.—Handsome best mahogany folding bagatelle board, 7 ft. long, quite new and fitted with indiarubber cushes, 9 real ivory balls, cues, bridge, markers, rules, lock and key. Nice size for family use. Only £2 15s.; worth £4 10s. Approval with pleasure.—Mr. Ralph, Cambridge House, Lakenheath, Suffolk.

Fish Knives and Forks.—Six pairs very handsome, best silver plated fish knives and forks, with beautiful sterling hall marked silver handles, by Mappin, in elegant case, only £2; worth £4. Also pair of silver plated fish servers to match, only 18s. 6d.; worth 38s. Both new. Presents. Approval before payment willingly.—Mr. Ralph, Cambridge House, Lakenheath, Suffolk.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

NOTES IN PARLIAMENT.

The Midwives Bill.—The House of Commons on Wednesday last gave a second reading to the Midwives Bill, and referred the measure to the Standing Committee on Law. The discussion, which lasted about five hours, was conducted with moderation and in a spirit of judicial fairness. Lord Cecil Manners, who was in charge of the measure, laid stress on the importance of proper training and of some form of registration and regulation of midwives. These things, he thought, would be provided for under the auspices of the Board which would be constituted by the Bill.

The More Expert Opinion against the Bill was efficiently voiced by Sir J. Tuke and Sir W. Foster, who contended that the Bill, whilst it gave a sort of hall-mark to qualified midwives, would not prevent unqualified midwives from continuing to practise. They also suggested that to a dangerous extent there would be a tendency under the Bill to rely on midwives where the presence of a medical man was really necessary. Incidentally, Sir W. Foster referred to certain scandals and immoralities, and expressed the opinion that it was becoming necessary to provide for the registration of all nurses and attendants on the sick. But the registration must be on clearly defined lines, and, while it secured exclusion of the incompetent, must not open the door to the danger of persons who received certificates conducting illegitimate forms of practice.

A Persuasive Speech for the Bill was made by Sir Michael Foster, who argued that the Bill was in the interests of the poor, and that it sought to provide trained nurses who should know when to send for the doctor. There were, he said, several points on which the Bill might be improved, but he hoped that the House would assent to the second reading, and leave the question of the amendments which should be made to a committee. This practically was the line which the Home Secretary took when he afterwards spoke. It was the view which prevailed with the House. The critics of the Bill did not even press their objections so far as to go to a division.

PUBLICATIONS RECEIVED.

Money-Making Advertising. By Richard Lee. Second edition. Pp. 56. London: Lee's Advertising Agency, Limited, 26, Ludgate Hill, E.C. 1902. From the Publishers.

The Idler. February, 1902. Pp. 96. Price 6d. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. From the Publishers.

Selection of Subject in Pictorial Photography. By W. E. Tindall, R.B.A. (Illustrated). Pp. 83. Price, cloth, 3s. 6d. net. London: Iliffe and Sons, 3, St. Bride Street, E.C. 1902. From the Publishers.

Die Mikroskopische Analyse der Drogenpulver. Ein Atlas für Apotheker, Drogisten und Studierende der Pharmacie. Von Dr. Ludwig Koch.—2 Lieferung. Price 3.50 M. Leipsig: Gebrüder Borntraeger. 1902. From the Publisher.

Street's Newspaper Directory for 1902 for Great Britain and Ireland. Pp. lii. + 354, with map. Price 3s. 6d. London: British, Foreign and Colonial Advertising Offices, 8, Serle Street, W.C. 1902. From the Publishers.

A Report on the Cultivation of Pine Apples and Other Products of Florida. By Robert Thomson. Pp. 15. Kingston, Jamaica: Government Printing Office, 79, Duke Street. 1901. From the Director of Public Gardens and Plantations, Kingston, Jamaica.

Class List and Index of the Periodical Publications in the Patent Office Library. Patent Office Library Series, No. 8; Bibliographical Series, No. 5. Pp. 191. Price 6d. London: Published at the Patent Office, 25, Southampton Buildings, Chancery Lane, W.C. 1902. From the Publishers.

University College, Dundee, University of St. Andrews, Calendar for 1901-1902. Pp. 136. Price 6d. Dundee: John Leng and Co., Bank Street. 1901. From the Publishers.

Photo-Miniature, The: A Monthly Magazine of Photographic Information. Vol. III., No. 33, December, 1901. The Dark-Room. Pp. 391-437. Price 6d. Post Free, 7½d. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. From the Publishers.

MISCELLANEOUS NEWS.

Readers are requested to send items of local news of general pharmaceutical interest. When newspapers are sent, the passages of interest should be marked.

The Twenty-First Junior Pharmacy Ball, held at the Portman Rooms, London, on February 26, was the most successful ever held, 360 persons being present.—Mr. Wm. Warren took the chair at supper, and proposed the only toast of the evening, "Success to the Junior Pharmacy Ball, and the Health of the Ladies." He congratulated Mr. Trick on his great success in his first year of office as Secretary.—Mr. Trick, in replying, said he assumed the position with some diffidence, but he entered actively into the work, and the success following was extremely gratifying to him, and sufficient reward for his efforts. — The arrangements throughout the evening were in every respect satisfactory, and carried out by the able superintendence of Mr. C. W. Martin as M.C., assisted by Mr. R. L. Cassie. Messrs. Allen and Hanbury had kindly provided perfume sprays, cachous, etc., for ladies, and Mr. Mortlake Mann's Band was in excellent form.

Imitation Tobacco.—In the Edinburgh Court of Session, on February 20, Lord Stormonth Darling heard further evidence in the Exchequer complaint against David Wilson and Robert Simpson Baxter, of Dundee, of having had in their possession powdered wood, resembling tobacco or snuff, in contravention of the Statute. Particulars of this case were given in the *Pharmaceutical Journal* of February 8 last. The offence was now proved, and his Lordship imposed the full penalty, fining Wilson and Baxter £200 each. Lord Stormonth Darling said the defendants had undoubtedly tried to imitate tobacco.

Long Firm Frauds.—At the Central Criminal Court, on Wednesday, February 12, before Mr. Rentoul, Assistant Commissioner, James Hodges (62), pleaded guilty to an indictment charging him with obtaining goods by false pretences from the Vinolia Company, and Henry Chas. Bedding and Christian R. Lea, pleaded guilty to conspiracy to defraud.—Mr. A. Gill, who prosecuted, said that the allegations against the prisoners were that they had been concerned together in the obtaining of goods from various firms under the pretence that they were carrying on a *bonâ-fide* business as chemists and druggists in various parts of the Metropolis. Goods had been obtained to the value of over £1,000, and not paid for.—Previous convictions were proved against Hodges.—Mr. Purcell urged that Hodges had been already in custody since November 14, and that he had been tempted to the commission of the frauds by the facilities offered for giving of orders for goods.—Mr. Rentoul sentenced Hodges to eighteen months, and Lee and Bedding to nine months' hard labour.

Fire at a Chemist's.—Shortly before 6.30 p.m. on February 14 a fire broke out in the premises of Mr. Burbank, chemist, 116, Walton Street, Oxford. It appears that a boy was sent to draw some benzoline, which was stocked in a building of corrugated iron about 18 feet by 15 feet, used for storing oils and mineral waters, and in order to facilitate matters struck a match. The light and the oil soon came into contact, and as may be imagined a blaze of large dimensions ensued. A messenger was at once dispatched to the Fire Brigade Office. Meanwhile a telephonic message was received from the Clarendon Press apprising the officer in charge at the station, and under the direction of Captain Symonds a hose-cart and twenty-three firemen were soon at the scene of the conflagration. It was at first thought probable that the throwing of water on the burning oil would cause an explosion, but happily nothing of so serious a character occurred, and with a plentiful supply of water the fire was quickly under control. Two drums of benzoline and one of methylated spirits were destroyed, while other goods were more or less damaged by fire and water. The property was insured in the Phœnix office.

Damages Against an Irish Chemist.—At Dublin, on February 21, Master Courtenay and a jury of six had before them a case in which Mary Jane Cremin sued F. W. Brittain, a chemist in Drogheda, for alleged negligence in supplying her with extract of belladonna when she asked for confection of senna, in consequence of which her health had been permanently injured. Mr. T. L. O'Shaughnessy, K.C., who appeared for the plaintiff, said the latter was in the habit of taking confection of senna, and sent to one of the defendant's establishments in Drogheda, for two-pennyworth of the preparation on July 11. She was supplied, however, with extract of belladonna, and as the result of taking that the most appalling results followed, her eyes began to swim, she lost consciousness, and became practically blind. During the night two doctors had to work to save the plaintiff's life. The box had been sent back to the defendant, and he sent down an emetic, and after working with a stomach pump all through the night the plaintiff's life was saved; but as the result of that terrible struggle the plaintiff now suffered from disease of the heart. The plaintiff had not concluded her examination when counsel conferred together, and Mr. O'Shaughnessy said the jury would not be further troubled with the case. It was admitted that this was an accident, and the conduct of the defendant in getting two doctors to sit up all night, as the result of which the plaintiff's life was saved, was highly to his credit. What counsel suggested was that damages should be fixed at £200 and costs at £60. The two doctors, Dr. Parr and Dr. Bradley, had acted in a heroic manner, and as the result of their efforts the plaintiff's life had been saved. The jury returned a verdict in the terms of the arrangement between counsel.

Alleged Fraudulent Trading.—At the City Police Court, Manchester, on Saturday, February 15, Arthur Vickers, a middle-aged man, of respectable appearance, was charged on remand with obtaining 5s. by false pretences from James Tait. The accused was represented by Mr. J. D. Judson.—Detective-Inspector Jauncey said that on February 11 he arrested prisoner at premises which he occupied in Altrincham Street, London Road. The place was formerly a dwelling-house, and prisoner utilised it as a office at a rental of 4s. a week. He cautioned him, and afterwards informed him that he had a warrant for his arrest for obtaining money by false pretences. He asked him if he had any partners, and prisoner replied, "No, I have paid them out." He made an examination of the place, and the stock-in-trade appeared to consist largely of new empty card-board boxes, a mortar, bag of charcoal, and samples of paste, which he told the witness was Roachaline, for killing beetles. There were also packets of teething, headache, and other powders. A number of bandbills were in the place relating to the Lighting Manufacturing Chemical Company, at Newton Street, Piccadilly, the Roachaline Company at Rusholme, but the prisoner appeared principally to advertise as Calder Bros., Britain Street, and the Novelty Company, Spear Street. In answer to the charge, prisoner said "He has made a mistake, it is 10s." On searching him witness found thirty-eight letters of complaint from persons in different parts of the country. The police had also received about twenty-eight letters of complaint respecting the prisoner from private individuals and chief police officers. Some months ago—about the latter end of last year—he cautioned the prisoner as to the manner in which he was carrying on his business.—James Tait, of Derby, stated that he noticed an advertisement in a Sheffield paper with respect to the Novelty Company, and sent 10s. for a quantity of assorted novelties. He had, not, however, received any of the articles.—Cross-examined by Mr. Judson, witness said he was not aware that the goods had arrived that morning at his house after he left. The parcel, explained Mr. Judson, had been sent.—James Hewitt, grocer's manager, of St. Helens, said he had sent 6s. to the Novelty Company, and had received three dozen headache powders, three dozen rhubarb powders, and a dozen other powders. The parcel was worthless.—Prisoner was remanded for a week, and allowed out on bail.

SCHOOL AND COLLEGE NEWS.

Imperial College of Chemistry.—On Friday, February 21, the students of this college visited the London Docks. After inspecting the ivory warehouse, the spice floors interested the students for a considerable time. Here beautiful specimens of Penang cloves, East Indian nutmegs, mace, cassia, and choice cinnamons were exhibited, together with Cochin ginger in the "green" and dried conditions; whilst upon the floor above large quantities of the several cinchonas were shown and studied, each student receiving specimens for personal use and identification. Twenty thousand kegs were seen upon the iodine floors, each keg containing approximately ninety pounds weight and valued at £70 sterling. The mercury vaults were full of the well-known iron bottles, each containing about seventy pounds weight of quicksilver, and the students here saw a solid twenty-eight pound iron weight sailing gallantly round in a bowl of mercury, as an evident example of the different specific gravities of the two metals.

Inter-Pharmacy Football League.—"Square" *versus* London College.—This fixture was played off on the "Square" ground at Shepherd's Bush on Saturday last. There was a large attendance, great interest being taken in the match, as the capture of a single point by the "Square" would decide the championship of the League and the custody of the silver cup for the next twelve months. The London College captain won the toss, and the "Square" kicked off against a strong breeze and facing the sun. The whole of the first half was in favour of the London team, although the "Square" opened the scoring, Hewlett shooting a fine goal from a difficult position. The visitors soon afterwards equalised, and although they kept up the pressure, half-time arrived with the score one goal each. On the resumption of play, the home team pressed heavily, and more than once came within an ace of scoring, a beautiful shot by Allen being only just tipped over the bar by the custodian. Next the "Square" goal was threatened, the combination of the visiting forwards being very effective, and superior to that of their opponents, who, however, about twenty-five minutes after the restart, succeeded in placing the ball in the net. The score stood at two goals to one for the "Square" until close upon time, when Hirst, receiving the ball from Hewlett, scored a grand goal, which set the issue of the match beyond all doubt; thus the game ended, "Square" three goals, London College one goal. The "Square" team was: Goal, Cleghorn: backs, Martin and Paterson; half-backs, Williams, Collitt, and Moore; forwards, Mitchell (captain), Allen, Garsed, Hewlett, and Hirst.

SOCIETY AND ASSOCIATION NEWS.

Bradford and District Chemists' Association.—At a meeting of this Association, held on February 25, an address was delivered by Dr. Chas. Symes, of Liverpool, in the unavoidable absence of Mr. John Harrison, of Sunderland, who had been expected to speak on the occasion. A report of the meeting will appear next week.

Huddersfield and District Chemists' Association.—The inaugural dinner of this Association was held on February 26, the President, Mr. R. G. Walshaw, in the chair. The toast of the Pharmaceutical Society was responded to by the President of the body, Mr. G. T. W. Newsholme, of Sheffield, and the toast of the local Association was proposed by Mr. W. S. Glyn-Jones, of London. A report of the proceedings will appear in next week's *P.J.*

Chemists' Assistants' Association.—A musical and social evening was held at 73, Newman Street, London, on Thursday, February 20, when Mr. F. A. Rogers occupied the chair. There was a good attendance. A good programme had been arranged, consisting of songs by Messrs. Morley, Lewis, Easton, Jones, Garsed, Blin, Strother, Hayling, and Latreille. Messrs. Britton and Parker performed the duties of accompanists. On the motion of the President a vote of thanks was accorded to Mr. F. A. Rogers for presiding. The usual light refreshments were provided. A very enjoyable evening terminated somewhere about midnight.

Plymouth, Devonport, Stonehouse and District Chemists' Association.—A meeting of the members of the Trade Section was held at the Association Rooms, Plymouth, on Tuesday, February 25, to discuss the recent raid made by the Inland Revenue authorities upon unstamped preparations sold by chemists in the Three Towns. It was unanimously decided to elect a committee to consider what steps should be taken to prevent the persecution to which the members had been subjected, and, further, the committee were asked to collect evidence from all persons whose preparations had been considered liable to stamp duty, and that the honorary solicitor be requested to express an opinion upon labels which were of a decidedly doubtful nature. The members thought the matter of great importance, affecting as it does chemists throughout the country, and that it should be carefully considered before any definite action be taken.

Chemists' Managers' and Assistants' Society of Great Britain.—At a meeting of the Chemists' Managers' and Assistants' Society of Great Britain, held at the Horse Shoe Hotel, Tottenham Court Road, on Wednesday, February 26, Mr. Pickering in the chair, Mr. Cullwick read a paper on "Apprentices and Apprenticeship." This subject, he said, was a vital one to chemists and druggists. The inducement held out to those desirous of becoming apprentices was so small that they preferred other trades and professions. The abolition of the Pharmaceutical Society's Preliminary Examination was thought to be a mistake, and it was suggested that a resolution be sent to the Pharmaceutical Society that bookkeeping and commercial work be included in place of modern languages.—The first annual dinner of this Society will be held at the Horseshoe Hotel, Tottenham Court Road, on March 12 next. Tickets, gentlemen, 5s. each; ladies, 4s.; double, 8s. 6d., which may be had from the following:—Mr. C. E. Pickering, 97, High Street, Marylebone; Mr. G. Cullwick, 13, Mysore Road, Lavender Hill; T. R. Patterson Holt, 2, Belgrave Street, Argyle Square, W.C.

PERSONALITIES, BUSINESS CHANGES, ETC.

Notices of business changes, etc., should be sent by Divisional Secretaries or the persons interested, and will then be inserted free.

Mr. J. F. Liverseege, F.I.C., Ph.C., has been appointed public analyst for Birmingham, in succession to Dr. Alfred Hill, the Medical Officer of Health.

Mr. William Paris, dispenser to the County of London Manor Asylum, Epsom, has been granted sick leave to enable him to undergo an operation for appendicitis.

Messrs. W. L. Ingham and Co., Limited, will shortly open premises in High Street, Epsom, as a drug store. Mr. Ingham was for many years with Goss and Co., Limited, Regent Street, London, W.

Mr. K. James has removed the old-established chemist's business, carried on successfully at 19, Market Square, Port Elizabeth, for several years, to Castle Chambers, close by, where the business will be carried on under the style of K. James and Company, Mr. James having taken into partnership Mr. D. McNaughton. The address is now Castle Chambers, Market Square, Port Elizabeth.

Sir William Christopher Leng, of Sheffield, whose death was notified last week, had been connected with the daily press of Sheffield since the early sixties, but he served an apprenticeship with Mr. Fulham, wholesale druggist and drysalter, Hull. Journalism, however, had more attractions for Mr. Leng, as he was then, hence he commenced writing for the local press, and in 1859 he joined his brother (Sir John Leng) on the editorial staff of the *Dundee Advertiser*. A few years later he came to Sheffield, where he made a name for himself by investigating and exposing the outrages then perpetrated in Sheffield by the Trades Unions as part of their system of picketing.

LONDON GAZETTE NOTICES.

PARTNERSHIP DISSOLVED.

Charles Skipp and Frederick William Mardon, dentists, Bishops Stortford, Herts. Debts will be received and paid by F. W. Mardon.

RECEIVING ORDERS IN BANKRUPTCY.

Thomas Calrow, surgeon, 37, Bolton Street, Bury, Lancs.

Herbert Henry Presbury, pharmaceutical chemist, trading as Moody and Catterns, 73, Church Street, Camberwell.

MARKET REPORT.

London, Thursday, February 27, 1902.

Business in Drugs and Chemicals has again been exceedingly dull during past week, and while there are no changes of any special importance in either direction to record, the tendency of many articles can certainly not be described as being anything but weak. German makers of Lithia Salts advanced price to a trifling extent. It looks, however, very much as if this were only a flash in the pan. Glycerin is firm, as also is Cod Liver Oil. Quinine looks like advancing; in fact, has already hardened decidedly as far as the speculative market is concerned. Acid Carbolic quiet, but steady. Shellac dull. Iodides unchanged. Bromides firm. Opium and Morphine weak. Codeine steady. Acid Citric, Acid Tartaric, and Cream of Tartar unchanged. We give below some quotations of articles of principal interest:—

ACETANILIDE.—It is rumoured that the already depressed market for this article is likely to suffer a further slump, as a result of American competition. Quotations are nominally 8½d. to 10d. per lb., according to quantity and make.

ACID BORACIC—Is unchanged at 22s. per cwt. for crystals, and 24s. per cwt. for powder.

ACID CARBOLIC.—Market is quiet, but steady at 6½d. to 6¾d. per lb., according to quantity and make, for the 34-35° ice crystal in large bulk packing; 7d. to 7½d. per lb. for 39-40° ice crystal, and 7¾d. to 8¼d. per lb. for the B.P. quality, 39-40°, in detached crystals. Crude, 60° F., 1s. 11d. to 2s. per gallon; ditto, 75° F., 2s. 6d. to 2s. 7½d. per gallon; liquid, 95-98 per cent., of pale straw colour, 1s. to 1s. 2d. per lb., according to quantity, in 40 gallon casks.

ACID CITRIC—Quiet but fairly steady at 1s. 0½d. to 1s. 1d. per lb., according to quantity and make for crystals in 5 cwt. casks.

ACID TARTARIC.—English is quoted 11¼d. to 11½d. per lb. on the spot, and foreign 10⅜d. to 10½d. per lb.

AMMONIA SULPHATE—Is easier on basis of £11 7s. 6d. for grey, 24 per cent. London spot.

BISMUTH.—Carbonate has been reduced 1d. per lb. to 6s. per lb. in consequence of outside underselling. Subnitrate is unchanged at 5s. 5d. per lb.

BORAX.—Crystals are still quoted 13s. per cwt., and powder 14s. per cwt.

BROMIDES.—Are very firm at 1s. 11½d. per lb. for Potassii Bromid, 2s. 2½d. per lb. for Sodii Bromide, and 2s. 3d. per lb. for Ammon. Bromid. Bromine is also unchanged at 2s. 2d. per lb. for case lots (60 lbs. in a case).

CAFFEINE.—Makers still quote 12s. 6d. per lb. for the pure alkaloid and 8s. 9d. per lb. for the citrate B.P.

CINCHONA BARK.—It is reported that to-day's Bark Sales in Amsterdam, at which the equivalent of about 35 tons of Quinine Sulphate comes under the hammer, have opened well at prices rather above the parity of the previous auction.

COCAINE—Quiet, but steady at 17s. 9d. to 18s. 3d. per oz., according to quantity, for the Hydrochlorate, in 25 oz. tins.

CODEINE—Is unchanged at 12s. 3d. to 12s 6d. per oz. for the pure alkaloid, and 11s. per oz. for the Muriate and Sulphate, and 9s. 9d. per oz. for the Phosphate Salts.

COD LIVER OIL.—In consequence of unfavourable reports as to the fishing, prices are firm, and for new oil for early arrival as much as 100s. per barrel has been paid; 90s. per barrel is, however, the nominal quotation for best new non-congealing Norwegian Oil, in tin-lined barrels of 25 gallons, for fairly prompt shipment.

COPPER SULPHATE—Quiet, but steady, at £19 to £20 per ton on the spot.

CREAM OF TARTAR.—First White Crystals are worth 70s. per cwt. on the spot, and powder 72s. per cwt.

ESERINE (PHYSOSTIGMINE).—Makers quote 5s. per gramme for the sulphate and salicylate salts and 6s. per gramme for the pure alkaloid.

GLYCERIN.—There is no change in price of the refined article, which is still quoted 63s. 6d. to 66s. per cwt. for best white, odourless, double distilled, chemically pure 1,260 SG quality in tins and cases, 2 or 4 × 56-lb. tins in a case.

IODIDES.—The combined makers still quote Potassii iodid. 8s. 9d. per lb., Sodii iodid. 9s. 10d. per lb., Iodine resublimed 10s. per lb., and Iodoform cryst. pulv. and precip. 11s. 8d. per lb. The commercial quality of Iodine is also unchanged at 6d. per oz.

LITHIA SALTS.—On Monday the German makers advised an advance in price of 4d. per lb. for the Carbonate and of 3d. per lb. for the Citrate cryst., making prices 6s. 3d. per lb. and 4s. 9d. per lb. respectively for 2 cwt. lots.

MERCURIALS.—Makers have made no change in their prices, which are 3s. 0½d. per lb. for Calomel, 2s. 8½d. per lb. for Corrosive Sublimate, 3s. 4½d. per lb. for Red Precipitate, and 3s. 7d. per lb. for White Precipitate.

MORPHINE—Continues very quiet at 4s. 5d. to 4s. 7d. per oz., according to quantity, etc., for the Hydrochlorate powder, and 2d. per oz. more for the crystalline salt.

OPIUM—Dull, with very little doing, reliable reports as to the prospects of the autumn sowings in the producing districts being now awaited. The slight improvement in value of Persian is maintained, and good quality is worth 9s. 3d. to 9s. 9d. per lb.

PHENACETIN.—Price is tending downwards, in consequence of under-selling on part of outside makers. Quotations remain, however, nominally still 4s. 3d. to 4s. 9d. per lb., according to quantity, for both crystals and powder.

PILOCARPINE.—Makers still quote 70s. per oz. for both the Muriate and the Nitrate Salts.

QUICKSILVER—Is unchanged at £8 15s. per bottle from the importer. Secondhand still not offering.

QUININE.—The makers of the B&S and Brunswick brands still quote 1s. 2d. per oz. for the Sulphate for 1,000 oz. lots in 100 oz. tins, while in the speculative market 1s. 1½d. per oz. has been paid for these brands on the spot, 1s. 1¾d. per oz. for June delivery, and 1s. 2d. per oz. for August. If to-day's Bark Sales in Amsterdam go off well, of which there appears to be every prospect, and provided the Bark shipments from Java for February are not excessive, we may very likely see a decided improvement in value of Quinine.

SALICINE—Is unchanged at 15s. 6d. per lb.

SHELLAC.—Market continues quiet but steady on basis of 119s. 6d. to 120s. per cwt. for fair TN on spot.

SODA NITRATE.—Commercial £10 7s. 6d. per ton, and refined £10 10s. per ton.

SPICES.—Cloves: 30 cases Penang sold, good bright picked at 8½d., and dullish rather damp at 7d.; 54 bales Zanzibar bought in at 4d. Ginger: Of Cochin, 107 bags medium and small washed rough sold at 39s. to 41s.; of Jamaica, only small quantity sold, good middling to fair bright small at 40s. to 45s., small lean and dark at 35s. to 37s. Black Pepper: Aleppy bought in at 5¾d. and Penang at 6d. White Pepper: Singapore bought in at 10⅛d. for good fair. Chillies: 100 bags long bright Japan bought in at 30s., and 96 bales Zanzibar at 34s. to 35s. Mace: 6 packages West India sold, bold pale brownish at 1s. 7d., fair pale and reddish at 1s. 4d. Pimento: 931 bags offered, and about half sold at a decline, realising 2⅝d. to 2¾d.

SUPHONAL—Is still in the dumps, and it is still possible to buy Bayer's make at 5s. per lb. for quantity and bulk packing.

VANILLOES.—In auction, on Wednesday, supply was comparatively moderate, only 567 tins being offered, of which 487 tins sold; very long beans at 1s. per lb. decline, good longs at full rates, and fine medium lengths at 1s. per lb. advance.

DISSOLVED HAEMOGLOBIN . . CAPSULOIDS

THE LANCET of August 11th, 1899, says:—
"The administration of Iron in this form is satisfactory. To not a few the appearance of Haemoglobin is repulsive. Capsuloids meet this objection, and evident care is devoted to their preparation."

CAPSULOIDS are so largely prescribed by Physicians

BECAUSE—They contain only pure dissolved Haemoglobin scientifically extracted from carefully selected fresh blood.

BECAUSE—They never produce the slightest nausea, like most Haemoglobin mixtures and powders, are pleasing to the eye, and easily swallowed even by young children, and furnish exact doses.

BECAUSE—Anæmia and chlorosis, and all similar conditions of blood, are rapidly cured by taking them.

Capsuloids are sold in boxes for dispensing only.

THE CAPSULOID COMPANY, 31, SNOW HILL, LONDON.

BUY FROM THE DIRECT IMPORTERS

SPONGES

FOR CHEMISTS' TRADE.

I. & M. COHEN

Sponge Merchants, Importers and Exporters,

Contractors to H.M. Government,

35 & 54, HOUNDSDITCH, & 66, ST. MARY AXE
LONDON, E.C.

Every Description always on hand.

TRADE NOTES AND NOVELTIES.

Messrs. Parke, Davis and Co. send particulars of a scheme whereby the directors of the company are offering 4,000 shares in the company to a large number of their servants who have been fifteen years or more in their employ, at about £3 per share less than they can be purchased in the open market. By so doing the directors consider they are simply consulting the best interests of the stockholders.

Small-Pox Insurance.—Messrs. Charles Letts and Co., the well-known diary publishers, have contracted with the General Accident Assurance Corporation, Limited, for 1,000,000 insurance coupons, covering the risks of contracting this dread disease, for the sum of £100 in the event of its ending fatally, together with a weekly allowance during illness (limited to five week), and have placed this insurance on the market in conjunction with a note-book or card-case for the nominal sum of 1s., and are receiving from stationers everywhere hundreds of orders daily. Their leather factory is all but exclusively employed in dealing with the rush of business.

Hints on Chemical Cleaning.—Messrs. James Townsend and Son, of Little Queen Street, Exeter, send a copy of the first of a series of "manualettes" for chemists' advertising. The booklets will be edited by Mr. A. C. Wootton, and will deal with the various sections of a modern pharmaceutical business. The first of the series contains hints on chemical cleaning, and is particularly suitable for circulation at the present season. A noteworthy feature of these manualettes will be that in every case the text can be exactly what the chemist issuing it would like to say himself. The inside sheets will be printed specially for each order, so that "own specialties" can be expressly recommended in the text, and prices can be quoted as desired. Manualettes in preparation include useful treatises on veterinary, dietetic, horticultural, photographic, optical, and other subjects, and will be calculated to cultivate trade in all those branches. Prices and further particulars may be obtained from Messrs. Townsend and Son on mentioning the *P.J.*

DIARY OF THE WEEK.

Monday, March 3.

Institute of Chemistry.—Annual Meeting.

Royal Institution, Albemarle Street, Piccadilly, W., at 5 p.m.—General Monthly Meeting.

Tuesday, March 4.

Royal Institution, Albemarle Street, Piccadilly, W., at 3 p.m.—"The Temperature of the Atmosphere: Its Changes and their Causes" (Lecture II.), by William Napier Shaw.

Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, London, W.C.—Finance and other Committees.

Pharmaceutical Society, 17, Bloomsbury Square, London, W.C., at 3 p.m.—Meeting to consider a Martindale Memorial.

Wednesday, March 5.

Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, London, W.C., at 11 a.m.—Meeting of the Council.

Pharmaceutical Society of Ireland, 67, Lower Mount Street, Dublin at 3 p.m.—Meeting of the Council.

Chemists' Managers' and Assistants' Society, Horse Shoe Hotel, Tottenham Court Road, London, at 9.30 p.m.—Meeting of the Council.

School of Pharmacy Students' Association, 17, Bloomsbury Square, London, W.C., at 8 p.m.—Lecture by Professor L. Norman Collie, on "The Lofoden Islands," illustrated by lantern slides.

Young Chemists' Association, Working Men's Club, Gallowgate, Newcastle-on-Tyne, at 8 p.m.—"The Pharmacist as a Professional Man," by F. R. Dudderidge.

Thursday, March 6.

Chemical Society, Burlington House, Piccadilly, W., at 8 p.m.—"The Slow Oxidation of Methane at Low Temperatures," by W. A. Bone and R. V. Wheeler; "Isomeric Additive Compounds of Dibenzyl Ketone and Deoxybenzoin with Benzal-*p*-toluidine, *m*-Nitrobenzalaniline and Benzal-*m*-Nitraniline—Part III., by F. E. Francis; "Mesoxalic Semi-aldehyde," by H. J. H. Fenton and J. H. Ryffel; "*m*-Nitrobenzoylcamphor," by M. O. Forster and F. M. G. Micklethwait; "Picrimidothiocarbonic Esters," by J. C. Crocker.

Chemists' Assistants' Association, 73, Newman Street, London, W., at 8.30 p.m.—Lecture on "Phosphorescence," by Professor J. Norman Collie.

Linnean Society, Burlington House, Piccadilly, W., at 8 p.m.—"Some New Species of Lepadidæ in the British Museum (Nat. Hist.)," by Prof. A. Gruvel; "The Morphology of the Brain in the Mammalia, with Special Reference to the Lemurs, Recent and Extinct," by Dr. G. Elliot Smith.

Midland Pharmaceutical Association, the University, Birmingham.—Pharmaceutical Papers, by G. E. Perry and John Barclay.

Friday, March 7.

Royal Institution, Albemarle Street, Piccadilly, W., at 9 p.m.—Lecture on "Radio-Active Bodies" (in French), by Professor H. Becquerel.

Saturday, March 8.

Royal Institution, Albemarle Street, Piccadilly, W., at 3 p.m.—Lord Rayleigh on "Some Electrical Developments" (Lecture IV.).

Pharmaceutical F.C. *v.* Law Sports Club,
Metropolitan College F.C. *v.* West-End Reserves.

MARRIAGE.

Rhead—Topham.—On February 20, at Christ Church, Fenton, Staffordshire, Alfred Rhead, Ph.C., Soho Hill, Birmingham, to Emmie, only daughter of Mr. James Topham, engineer, Albert Road, Fenton.

Notices to Correspondents.

All Communications for the 'Pharmaceutical Journal' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street Lincoln's Inn, London.

Contributions sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Barrie, Baylis, Beale, Benger, Bennett, Brown, Campbell, Corfe, Crookes, Davis, Dickens, Downing, Eldred, Firth, Forret, Forshaw, Gilmour, Green, Haigh, Hill, Holmes, Holt, Hooper, Jackson, James, Jelley, Jenkins, Johnson, Jones, Judge, Letts, Le Fevre, Lindley, Ling, Lyon, Mackinna, Mason, Millard, Moore, Owen, Paris, Paterson, Provis, Ruoff, Shuttleworth, Stedman, Stromeyer, Sumption, Taylor, Thorpe, Tippetts, Townsend, Trick, Usher, Wardleworth, Webb, Woolcock.

Pharmaceutical Journal

SATURDAY, MARCH 8, 1902.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

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Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Box Analytical Weights, 50 to ·01 grm.—Spurge, Witham, Essex.

Camwal Preference Shares; say number and lowest price. Thornley, Ilfracombe.

Platinum Utensils and scraps for cash.—P. Rowsell, 9, Derwent Grove, Dulwich.

Squire's Hospital Formulæ; latest edition.—State lowest price, post free, to Vance, Greystones.

Attention! Examine your old stocks! Wanted, Churchill's spirone; also sprayer.—Kershaw, 22, Clifton Terrace, Brighton.

OFFERED.

Chemist and Druggist for over 25 years; what offers?—John Waugh, Chemist, Salford, Manchester.

Photographic Mounts. 2,500 cabinets, 25s.; 2,000 C.D.V.'s, 7s. 6d. to clear.—Edward Peck, East Dereham.

3 Swan-neck Carboys, Y. G. Co., cut stoppers.—Chemist, 108, Church Rd., Manor Park, Essex.

Pharmaceutical Journal, 1892-1901 (nearly complete); what offers, to clear at once?—Beal, "The Elms," Aldboro' Rd., Ilford.

Bicycle.—Good strong Humber Roadster, 30-inch frame, with accessories; £6 15s.; carriage forward.—J. H. Tebbutt, 29, Wren St., Coventry.

Brownie, new, 5s.; No. 1 Nipper, with finder, second-hand, 3s. 6d.; the two for 7s. 6d.—Student, 18, Shrubbery St., Kidderminster.

OFFERED—*Continued*

B.P., '98, Ince's Latin Grammar, Newth's Chemistry, Essentials of Pharmacy, Wills's Chemical Notes, 15s. 6d.—T. Edwards, 55, Cedar Grove, Lodge Lane, Liverpool.

52 doz. Monico's Swiss Cream Soap, 1s. 6d. doz.; 11 Anæmic, 4 Invalids', 2 Infants', 2 Dyspeptic, 1s.; Cheltine Foods, 11s.; 1 × 4s. 6d. Sanmetto; 3 × 13½ Clarke's Skin Lotion; all perfectly clean.—Lee's Drug Stores, Stalybridge.

Dental.—What offers? 6 pairs of dental-forceps, in good condition; Ash's steam swager, complete; "Ever-Ready" electric mouth-lamp; ⅛ oz. Jamieson's "Extraordinary" plastic gold; and a few dental advertising blocks.—Apply, Knowles, Surgeon-Dentist, Derby.

Lawn Tennis Standards, etc.—For disposal, handsome set Lawn Tennis posts, with iron ground plates and screws, rachet for tightening net, etc., only 16s., worth 25s.; also superior tarred tennis net, 42 ft. long, with bound top, price 9s. 6d. Both new and perfect; approval allowed.—Mr. Ralph, Cambridge House, Lakenheath, Suffolk.

Fish Knives and Forks.—Six pairs very handsome, best silver plated fish knives and forks, with beautiful sterling hall marked silver handles, by Mappin, in elegant case, only £2; worth £4. Also pair of silver plated fish servers to match, only 18s. 6d.; worth 38s. Both new. Presents. Approval before payment willingly.—Mr. Ralph, Cambridge House, Lakenheath, Suffolk.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

A Copy of this Inset is inserted in every *Pharmaceutical Journal* issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at more than two hundred addresses in the United Kingdom; a list of these addresses will be found on page 16*a*.

Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

A Copy of this Inset will be forwarded gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at more than two hundred addresses in the United Kingdom; a list of these will be found on page 16a

QUALIFIED Assistant required, about 27.—Apply, Senior, c/o Hearon, Squire & Francis, 38, Southwark St., S.E.

ASSISTANT or Improver wanted (indoors).—State usual particulars and enclose photo to G. Crawshaw, Hyde Park, Leeds.

ASSISTANT, Improver or Part-Time Assistant, Dispensing and light Retail.—T. B. Marsden, Ph. Chemist, Withington, Manchester.

ILKLEY.—Competent Junior Assistant for good-class family and Dispensing; indoor.—Full particulars to G. W. Worfolk, Ilkley.

LONDON, S.E.—Junior (outdoors), accustomed to quick trade.—Green & Co., Wholesale and Retail Chemists, 36, Lower Marsh, S.E.

MOTTERSHEAD & CO., Pharmacists, 7, Exchange St., Manchester, have a vacancy for a Junior Dispenser.—State fully experience, age, and salary required, outdoors.

UNQUALIFIED Assistant in high-class Dispensing business.—Apply, stating age, experience, and salary required, to A. B. Payton, Crown Pharmacy, Crescent Rd., Harrogate.

JUNIOR Assistant. — Messrs. J. and H. Mathews, 68, Queen's Gardens, Hyde Park, W., require a Junior Assistant, accustomed to first-class pharmacy; qualified preferred.

HAMPSHIRE (Small Country Town).—Vacancy for Junior; indoors; hours easy; suitable for Assistant reading for Minor.—Apply, stating age, reference, and salary required, Willis, Alresford, Hants.

HERTFORD.—Junior, with experience in Dispensing, good Counter trade and Photography; short hours; comfortable home.—Apply, with photo, references, and salary required, to Geo. Durrant & Son, Hertford.

JUNIOR Assistant (good) wanted by April 1st, not under 21, accustomed to good-class Dispensing and Retail business; indoor. — State experience, reference and salary required, Power & Son, Walton-on-Thames, Surrey.

MAIDSTONE.—Indoor Junior Assistant, about 21, wanted, for good class Retail and Dispensing business; 3 kept. —Apply, stating the usual particulars as to age, height, references, salary and photo, to Stonham & Son, Maidstone.

JUNIOR Assistant wanted by April 1st (indoors); good Dispenser; abstainer preferred; easy hours; half-day weekly; healthy seasideresort.—Apply, stating age, references, salary required, to J. Richards, Chemist, Penarth, near Cardiff.

JUNIOR Assistant (unqualified), indoors, in good-class Dispensing and Retail business; with knowledge of photography preferred, but not essential.—Apply, with full particulars, to T. H. Foden, Pharmaceutical Chemist, King's Heath, Birmingham.

Assistants Wanted—Continued

WANTED, a qualified Assistant, not under 25 years of age, accustomed to a first-class Dispensing business; preference given to a gentleman with some Continental experience.—S. J. Weston, Pharmaceutical Chemist, 151, Westbourne Terrace, W.

QUALIFIED Indoor Assistant, about 24 to 26 years of age of good address and industrious habits, for good-class Retail and Dispensing business.—Full particulars to be addressed to Sub-Urban, c/o Messrs. Woolley, Sons & Co., Victoria Bridge, Manchester.

LUDLOW.—Wanted at once, Assistant; indoors; good-class country business; hours 8 to 7 except Market day; off at 2 on Thursdays; no Sunday duty; comfortable home; two kept.—State usual particulars and salary required, Woodhouse, Chemist, Ludlow, Salop.

WANTED, qualified General Manager for large and important London Store Chemists; age 30 to 35; previous experience of management on a large scale indispensable.—Write only, stating terms, to Pharmacy, c/o Willings, 162, Piccadilly, London, W.

WANTED an experienced Dispenser, well used to light class Counter Trade, for that department of a business, doing besides in Surgical Instruments and Appliances, Ophthalmic Optics, Amateur Photographics.—Apply to J. Griffiths Richards, 58, High St., Hastings.

AT once.—Qualified Assistant for Counter and Proprietaries; one other kept; hours 8 to 9; alternate Sundays off; usual half-holiday weekly; good-class business.—Will applicants please give full particulars, stating salary asked, Thompson, 162, Regent's Park Rd., N.W.

SCUNTHORPE.—Wanted at once, an Assistant, to live indoors, at Branch; light Retail business; weekly half-holiday; no Sunday duty; abstainer preferred.—State age, height, salary and references, with photo (to be returned), to J. Fletcher & Son, Chemists, Scunthorpe, *via* Doncaster.

DISPENSER wanted, Hospital for Women and Children, Leeds, non-resident; qualified; to devote his whole time to the work. Salary, £80, with prospect of advance of £10 per annum for 2 years.—For particulars, apply to Secretary, to whom all applications must be addressed, not later than March 19th.

AN energetic Assistant to carry on an old-established high-class business; must have had good class and store experience; Photographic knowledge essential; knowledge of French preferred; salary £120 currency and commission.—State age, height, and experience, with photo enclosed, to Davies, Chemist, Mill St., Guernsey.

APPLICATIONS are invited for an Important Post (progressive) in the office of a London Drug House; experience of Wholesale essential; liberal salary to suitable man; replies treated in strictest confidence.—Send all particulars, including age, detailed experience and present salary, to Senior, c/o Mather & Crowther, Ltd., New Bridge St., E.C.

REQUIRED in a few weeks' time, an outdoor qualified Assistant speaking French fluently; suitable vacancy for an assistant, aged about 25, returning from the Riviera, who has a fair knowledge of international pharmacy.—Address, stating fullest particulars as to experience, height, and salary required, Pharmacist, Pharm. Journal Office, 8, Serle St., W.C.

LEAMINGTON PROVIDENT DISPENSARY.

WANTED, a duly qualified Dispenser (male or female), unmarried; salary, £60 a year, with furnished rooms, coal, and gas.—Applications, with recent testimonials, particulars of age, &c., to be sent on or before March 22 next, addressed The Secretary, Provident Dispensary, Leamington.
February 28, 1902.

Assistants Wanted—Continued

PARIS.—Wanted, a thoroughly competent Assistant, more especially for the front counter, with occasional Dispensing; one speaking French or having Continental experience preferred; outdoors. — Particulars (age, height, copy of testimonials and photo, to be returned) to Co$_2$, Bureau 45, Paris, or apply to Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, E.C.

CALCUTTA.—Wanted at once, a qualified Assistant; age about 24 years; must be able to conduct analysis; first-class opening for a competent man. Salary, 1st year, 275 Rs. per month; 2nd year, 300 Rs. per month; 3rd year, 325 Rs. per month, and 4th year, 350 Rs. 4 years' agreement. Second class passage paid both ways.—Apply by letter to Calcutta, c/o Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

INDIA (N.W. Province).—Wanted, a good Assistant, well up in all branches of a Chemist's business; Minor qualification. Salary, 1st year 150 rupees per month, 2nd year 175 rupees per month, 3rd year 200 rupees per month; free furnished apartments; second-class passage paid out; required to start early in April; candidates must hold undeniable references.—Address, India, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CAPE COLONY.—Wanted, good Assistant, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £150; second year, £160; third year, £170; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, Cape, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified Assistant; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to Straits Settlements, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

SANITARY INSPECTORSHIPS.—Salaries £100 to £250. Numerous vacancies. Permanent appointments. Chemists or Assistants desiring change of occupation should qualify as Sanitary Inspectors. Special Postal Course of Lessons now commencing for London, Liverpool, Leeds, Cardiff, Manchester, Leicester, Newcastle-on-Tyne and Belfast exams. Anyone of average ability can pass. Had over 250 successful candidates, and fully half had no previous knowledge of sanitary matters.—Apply, Robert H. Mushens, Sanitary Science Teacher, Sunderland.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM, Qualified, Abstainer.—E. Kemp, 11, Cheapside, St. Leonards-on-Sea.

LOCUM, M.P.S.; town or country; disengaged.—W. Smith, 12, Westfield Rd., Surbiton.

LOCUM or Senior; 31; qualified; Experienced.—Chemist, 35, Orsett Rd., Grays, Essex.

LOCUM TENENS; experienced Dispenser.—M. P. S., c/o Pharm. Journal, 8, Serle St., W.C.

MAJOR; disengaged; 5 ft. 10 in.; 9 years' experience.—Betol, 6, Stoneygate Rd., Leicester.

MANAGER, Locum or Dispenser; qualified. — Somers, 41, Cologne Rd., Clapham Junction.

EVENINGS.—Private coach to Minor, Apothecaries' Hall Students.—M.P.S., 253, Burdett Rd., E.

Engagements Wanted—Continued

QUALIFIED; 28; disengaged; first-class experience; photography.—Styptic, 8, Serle St., W.C.

ASSISTANT or Branch Manager; married; good experience.—Hughes, 9, Falmouth Rd., S.E.

MANAGER; qualified; 20 years' experience London and Continent.—Holifield, 151, Westbourne Terrace, W.

ASSISTANT; Minor; silver medallist; disengaged; London; outdoors preferred. — Harrington, 45, Bessborough Gardens.

ASSISTANT, Scotch (21), Glasgow or Clyde port; disengaged end of March; highest references.—Assistant, 112, High St., Woolwich, S.E.

QUALIFIED; 28; experienced; any locality; permanency; disengaged shortly.—Energetic, Pharm. Journal Office, 8, Serle St., W.C.

QUALIFIED; varied experience; fluent French; permanency; disengaged 20th.—Reliable, Pharm. Journal Office, 8, Serle St., W.C.

UNQUALIFIED; 32; 15 years' experience; Photography; good references; East Coast preferred.—L. Ffrench, 7, West Stockwell St., Colchester.

DISPENSER; experienced; abstainer; 26; single; Apothecaries' certificate; knowledge Photography. — T. I., Pharm. Journal Office, 8, Serle St., W.C.

ASSISTANT, qualified, seeks engagement as Dispenser one or two evenings weekly from 6 p.m.; S.W. preferred.—M. P. S., 436, Merton Road, Wandsworth.

MANAGER; qualified; 26; good varied experience; references *re* past managerships; Provinces; permanency.—Statim, Sheppenhall Hall, Aston, Nantwich.

AS Manager or position of responsibility; last berth 3½ years as manager; aged 29; married; experience comprehensive.—Barnes, Bennett's Hill, Dudley.

READING.—Junior (20), 4 years' experience, desires engagement in Reading; outdoors; time for Minor study; disengaged middle of April.—Apply, Clegg & Son, Wantage.

DISPENSER and Book-keeper to Surgeon; qualified; temporary or permanent; in London; outdoors; well experienced; good references.—Address, Chemist, 30, Allen Rd., London, N.

QUALIFIED Locum; aged 27; engagements for any period booked in advance; 11 years' first-class London and Provincial experience; Photography. — Ranshaw 16, Margaret St., Brighton.

DISPENSER and Book-keeper to Surgeon, Chemist, Dispensary or Institution; mornings, evenings; part time or otherwise; qualified; experienced; excellent references.—Salicine, 8, Serle St., W.C.

A GENTLEMAN with some Medical and Surgical experience is desirous of representing a house dealing in Surgical Instruments or High-class Specialities; highest references.—Aickin, Hollywood, Southgate.

EMERGENCY.—Locum Tenens, for mixed business; qualified; abstainer; Extractor; Prescriber; excellent testimonials; disengaged March 6th; usual terms; reasonable.—Brewerton, 133, Liverpool Rd., Birkdale, Southport.

LOCUM TENENS (reliable); disengaged; town or country; in or outdoor; nearly 25 years' thorough all-round experience (including Prescribing, Extractions, Photographic, &c.); good Salesman, appearance, and address; 39; tall; highest testimonials; terms moderate.—M. P. S., 25, Hainton St., Grimsby.

A Copy of this Inset will be forwarded gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at more than two hundred addresses in the United Kingdom; a list of these will be found on page *16a*.

Businesses for Disposal

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NOTES IN PARLIAMENT.

Influenza at Westminster Palace.—An extraordinary number of members of Parliament, including several Ministers, are suffering from influenza. Mr. Dillon a few days ago voiced the alarm of many legislators by suggesting that an informal committee of members who are doctors should consider the matter and report whether anything could be done by disinfection or otherwise to diminish the risk to those attending the House. The Chancellor of the Exchequer, in reply, promised to inquire into the matter, for if anything could be done the members of the Government, who were so largely suffering themselves, would be glad.

When Members Returned to the House on Monday they found that a thorough process of disinfection had been carried out. The air was redolent with eucalyptus. Not a few members, however, privately expressed scepticism as to the reliability of the panacea. This scepticism in some measure found expression on Tuesday, when Mr. Rutherford asked the First Commissioner of Works if he would make arrangements whereby a sample of the atmosphere of the House during the sitting could be taken for the purpose of analysis and report. Mr. Akers-Douglas replied that he had already given directions that this should be done. A flippant member thereupon interjected a question whether the sample would be exhibited in the tea room!

A General Inquiry into the subject of influenza was desired by Mr. H. Hobhouse, who asked the President of the Local Government Board if, in view of the spread of the epidemic and the uncertainty that prevailed, and as to its causes and conditions, he would consider the appointment of a small commission of experts to investigate the matter. Mr. Long could not accede to this request. The causes and conditions of influenza had already, he said, been investigated by the Medical Staff of the Local Government Board by experts employed for the purpose, and two lengthy reports on the subject had been issued by the Department. In these circumstances it did not appear that any good results would follow from a further investigation.

Milk-Blended Butter.—During the last few days there have been a very large number of questions on this subject in the Commons. One of the most important, put by Sir E. Strachey, was whether, in view of the decision of the High Court (King's Bench) given on February 26, quashing with costs the conviction of Messrs. Pearks and Co., Limited, for selling milk-blended butter, the Government would take any further steps to prevent the sale of the article, or whether, after the decision of the High Court, legislation would be required to enable its sale to be stopped. Mr. Hanbury replied that the decision was on the point whether sufficient notice of the quality of the article sold had been given to the purchaser. But another appeal was pending on the further, and perhaps more important, point, whether this milk-blended butter came within the terms of the Margarine Act. Until a decision had been given in this case he could express no opinion as to the necessity for legislation or otherwise. In connection with this reply it is to be noted that, answering Mr. O'Shaughnessy on a previous day, Mr. Hanbury had stated that as soon as he had an opportunity of considering the evidence submitted to the Departmental Committee on Butter, he should fix a standard, and he hoped that it itself would go far to meet the difficulty which has arisen.

Lead Poisoning.—In the House of Commons, in Committee of Supply on the Civil Service Estimates, a discussion on lead poisoning in the pottery trade was initiated by Sir C. Dilke, who urged that it was desirable to establish a positive standard in respect to the use of lead. Mr. Asquith, speaking as a former Home Secretary, was entirely in favour of action to mitigate the evils, but he deprecated attacks made upon Government officials in carrying out their difficult duties in connection with those evils. The Home Secretary (Mr. Ritchie), who followed, stated that the chemical aspects of the question had been inquired into, and negotiations took place with a view to arriving at an understanding as to the using of lead, but they had failed. A suggestion had, however, been made by Lord James of Hereford that a golden list should be prepared of manufacturers who were prepared to conform to a certain class of rules which his Lordship had prepared. The Home Office, said Mr. Ritchie, would be glad to have the names of any manufacturers willing to be placed on such a list. He was sure that the new rules would be most beneficial.

The Midwives Bill.—This Bill having, as stated last week, been referred to the Standing Committee on Law, fifteen members have been added to that Committee with a view to the better consideration of the measure. They are Dr. Ambrose, Mr. Griffith-Boscawen, Mr. J. Burns, Mr. Caine, Mr. Emmott, Sir M. Foster, Sir W. Foster, Mr. Heywood Johnstone, Lord C. Manners, Mr. T. P. O'Connor, Colonel Sadler, Mr. Schwann, Sir B. Simeon, Sir J. Tuke, and Mr. E. Wason. Most of these members took part in the second reading debate. The Chairman of the Committee will be Sir J. Fergusson.

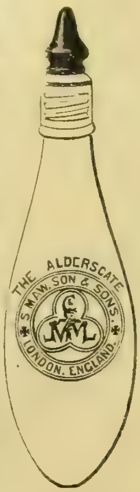
TRADE NOTES AND NOVELTIES.

Messrs. H. and T. Kirby and Co., Limited, Laboratory, 14, Newman Street, Oxford Street, W., intimate that in consequence of the funeral of the late Dr. Edmund A. Kirby, the founder of the business, and many years chairman of the company, taking place on Friday, the 7th inst., the offices and warehouse will be closed for business on that day.

The Small-Pox Scare has induced a large number of persons to be revaccinated, and at the present time many of those persons are on the look out for a shield which, while affording real protection to the vesicles, is comfortable to wear and not unsightly. The "Saddleback" Shield, patented by Messrs. Ayrton and Saunders, 34, Hanover Street, Liverpool, appears to be just what is required. An illustration of the shield, together with other particulars, will be found in our advertisement columns this week.

Yellow Mercury Iodide Tabloids.—Messrs. Burroughs Wellcome and Co., Snow Hill Buildings, London, E.C., send particulars of their yellow mercury iodide tabloids, gr. $\frac{1}{8}$ (0·008 Gm.). It is well known that the colour of ordinary green mercurous iodide is due to an admixture of the true yellow mercurous iodide with metallic mercury in varying proportions, and, consequently, that such a preparation is somewhat variable in its therapeutic action. Yellow mercury iodide tabloids, however, consist of a pure mercurous iodide and a definite chemical salt, containing no free mercury, hence they are sufficiently stable if ordinary care be taken for their preservation. The tabloids are issued in bottles containing 100, and should be kept protected as much as possible from the light.

Feeding Bottles.—Messrs. Maw Son and Sons, who always keep abreast of the latest developments in feeding bottles, have recently introduced some new and improved styles. Amongst them is the "Aldersgate," which is made in the form of the old-fashioned flat feeding bottle, with glass screw stopper, shaped to retain a teat, which can be readily cleaned, as it easily turns inside out. Another new style is the Sanitary Feeding Bottle, with glass tube and reversible teat. It is easily cleaned, and specially suitable for hot climates. Another recent pattern is the Southern Cross Feeding Bottle, with screw glass stopper and black india-rubber fittings, in a box with bottle and tube brush. This can be retailed in the Colonies at 1s., and will then yield a good profit.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Extract from Bye-Laws.

Section V., Clause 3.—Any Member qualified to vote desirous of nominating any other Member for election as a Member of the Council or as an Auditor, shall on or before the 18th day of March in every year give a notice signed by him to the Secretary, with the name and address of the nominee. The Secretary shall on or before the 20th day of March then instant address and send by post to each nominee a notice of his having been nominated, and inquiring whether he will accept office if elected, and in default of a written reply from such nominee being received on or before the 31st day of March then instant declaring his readiness to accept office if elected, such nominee shall not be deemed eligible or willing to be elected.

ANNUAL DINNER.

A meeting of the members of the Society and others interested in the Annual Dinner will be held at 17, Bloomsbury Square, W.C., on Wednesday next, March 12, at 12 noon precisely, to consider the arrangements for the Twenty-Ninth Annual Dinner, on May 27, 1902. Those who may be unable to attend this meeting, and who desire to co-operate with the President in making the annual gathering a successful one, are invited to send their names to the Secretary, at 17, Bloomsbury Square, London, W.C.

CALENDAR AND REGISTER.

The new editions of the Calendar and the Register are now ready. Application for copies should be made to the Secretary, 17, Bloomsbury Square, W.C. The price of the Calendar is 2s., and of the Register 5s., exclusive of postage, but in the case of copies purchased by subscribers to the Society postage is not charged.

APPLICATIONS FOR TRADE MARKS.

Instructions for Registration.

Application for the registration of a trade mark must be made on Application Form F, which costs five shillings, and can be obtained through any money-order office. The form contains general instructions for making the application, and, after being filled up, must be posted to the Comptroller, the Patent Office (Trade Marks Branch), 25, Southampton Buildings, London, W.C. If the mark applied for is one which can be accepted for registration, the applicant must next fill up the Registration Form I, which costs one pound, and can also be obtained through any money-order office. That form must also be sent to the Comptroller, when the mark will be advertised in the *Trade Marks Journal*, after which it will be duly registered if not opposed. A renewal fee of one pound must be paid by the proprietor of a trade mark every fourteen years.

*From the Trade Marks Journal, February 26, 1902.**

CLASS 1.

PHOTABS.—243,328. Compressed Photographic Chemicals. G. Houghton and Son, 88 and 89, High Holborn, London, W.C. ; Photographic Material Dealers.—January 15, 1902.

CLASS 3.

233,567.—Combination of devices, including Bosisto's Eucalyptus Oil, and the words Parrot Brand ; Eucalyptus Oil prepared for Human Use in Medicine and Pharmacy. J. Bosisto and Co., Proprietary, Limited, 342 to 346, Little Flinders Street, Melbourne, also known as Flinders Lane, Melbourne ; and Richmond, Melbourne, Victoria, Australia ; Distillers of Essential Oils.—October 12, 1900. Address for service in the United Kingdom, care of B. J. Wildbore, Trade Mark Universal ; Registration Agency, 38, Great Tower Street, London, E.C.

LAXINOIDS.—242,314. A medicine for Human Use. Rouse and Co., 12, Wigmore Street, London, W. ; Chemists.—November 28, 1901.

PEPSIKOLA.—242,627. Chemical Substances, prepared for Use in Medicine and Pharmacy. The Laxakola Company, 45, Vesey Street, New York, U.S.A. ; Manufacturers of and Dealers in Proprietary Medicines.—December 12, 1901. Address for service in the United Kingdom, care of McKenna and Company, 31-34, Basinghall Street, London, E.C.

PASTERINE.—243,996. Medicines for Human Use. Percy Frederick Richmond, 150, Westbourne Grove, Bayswater, London, W. ; Financier.—February 5, 1902.

CLASS 48.

Combination of devices and the words "The Geisha Bouquet."—239,733. A perfume. Reginald Blackwell Breidenbach, trading as Breidenbach and Company, 48, Greek Street, Soho Square, London, W. ; Manufacturing Perfumer.—July 26, 1901. *By Consent.*

Device, including figure of a milkmaid and cow, and the words "Buttermilk and Oatmeal Skin Soap."—242,181. Toilet Soap not included in other classes. Reginald Blackwell Breidenbach, trading as Breidenbach and Company, 48, Greek Street, Soho Square, London, W. ; Wholesale Perfumer.—November 22, 1901. *By Consent.*

EONIA.—243,504. Perfumery (including Toilet Articles, Preparations for the Teeth and Hair, and Perfumed Soap). J. and E. Atkinson, Limited, 24, Old Bond Street, London, W. ; Manufacturing Perfumers and Soap Makers.—January 21, 1902.

IODORIS.—243,505. Perfumery (including Toilet Articles, Preparations for the Teeth and Hair, and Perfumed Soap). Reginald Blackwell Breidenbach, trading as Breidenbach and Company, 48, Greek Street, Soho Square ; Wholesale Perfumer.—January 21, 1902.

From the Trade Marks Journal, March 5, 1902.

CLASS 2.

An Electrical Device and the words "Helmore's Electric Oil Embrocation.—237,127. An Embrocation for Veterinary Use. Susannah Marian Helmore, trading as Helmore and Co.,

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* Any objection to the registration of an application for the registration of a trade mark must be stated on Trade Mark Form J, obtainable at any money order office, price one shilling. Such objection must be lodged with the Comptroller within a month of the date given above

47, Munster Road, London, S.W.; Embrocation Manufacturer.—March 29, 1901. The essential particulars of the trade mark is the device and the name "Helmore's."

Beatawline.—243,072. Vermin-destroying Preparations included in Class 2. Ralph Leonard Snow, 1, Fell Street, Wood Street, London, E.C.; Manufacturer.—January 3, 1902. No claim is made to the exclusive use of the words "Beat all."

Yam-Ga.—243,346. Vermin Killer. Lorimer and Co., Limited, Britannia Row, Islington, London, N.; Manufacturing Chemists.—January 16, 1902.

Class 3.

Resa.—243,009. Medicines for Human Use, but not including Preparations for the cure of Corns and Warts, and not including any goods of a like kind to preparations for the cure of Corns and Warts. Walter Francis Reid, Fieldside, Addlestone, Surrey; Managing Director of a Public Company.—January 1, 1902

An Electrical Device and the words "Helmore's Electric Oil Embrocation."—236,299. An Embrocation for Human Use. Susannah M. Helmore, trading as Helmore and Co., 47, Munster Road, Fulham, London; Embrocation Manufacturer.—February 22, 1901. The essential particular of the trade mark is the device and the word "Helmore's."

Neurilla.—242,804. A Nerve Calmative, being a medicine for Human Use. The Dad Chemical Company (Incorporated), 105, Chambers Street, New York City, U.S.A.; Manufacturers of Medical Compounds.—December 19, 1901. Address for Service in the United Kingdom, care of A. M. and Wm. Clark, 53, Chancery Lane, London.

St. Edmund's Oil.—243,063. A Medicinal Oil for Human Use. Edwin Tennant Bradley, trading as E. Tennant and Co., 183, Wollaton Street, Nottingham; Commission Agent.—January 3, 1902. The essential particular of the trade mark is the words "St. Edmund's."

Gadiol.—243,265. Chemical Substances Prepared for Use in Medicine and Pharmacy. Merck and Co., 13-19, University Place, New York City, U.S.A.; Wholesale Druggists.—January 13, 1902. Address for Service in the United Kingdom, care of Wallace Fairweather, 62, St. Vincent Street, Glasgow.

A Pyramidal Device and the Word "Pyramid."—243,276. Glycerin specially prepared for Use in Medicine. Joseph Crosfield and Sons, Limited, Bank Quay, Warrington, Lancs; Soap Manufacturers.—January 13, 1902.—*By Consent.*

Varatos.—243,589. An Ointment for Human Use. The Varatos Company, College Hill Chambers, 23, College Hill, London, E.C.; Manufacturers.—January 22, 1902.

Class 42.

Tasric.—243,942. Baking Powder. The Liverpool Chemical Co., Limited, 54, Stanley Street, Liverpool, Chemical Manufacturers and Dealers, Drysalters, etc.—February 4, 1902.

Class 44.

Volka.—243,159. Mineral and Aërated Waters, Natural and Artificial, including Ginger Beer. R. White and Sons, Limited, Cunard Street, Camberwell, London, S.E.; Mineral Water Manufacturers.—January 8, 1902.

Class 47.

A Device Showing Flames and the Word JGNIS.—242,913. Solidified Oils for Heating. Jakob Widmer-Ackermann, 16, Haldenbachstrasse, Zürich, Switzerland; Manufacturer.—December 24, 1901. Address for Service in the United Kingdom, care of F. Bosshardt and Co., 4, Corporation Street, Manchester.

Class 48.

Erimus.—242,293. Perfumery (including Toilet Articles, Preparations for the Teeth and Hair, and Perfumed Soap). Amos Hinton and Sons, 10, 12 and 14, South Street, Middlesbrough; Merchants.—November 28, 1901.

Pop Corn.—242,488. Perfumery (including Toilet Articles, Preparations for the Teeth and Hair and Perfumed Soap). Vinolia Company, Limited, Malden Crescent, London, N.W.; Manufacturing Chemists, etc.—January 5, 1901.

Loxo.—243,182. Perfumery (including Toilet Articles, Preparations for the Teeth and Hair, and Perfumed Soap). Edwin Henry Tibbetts, 67, Bull Street, Birmingham; Hairdresser and Perfumer.—January 9, 1902.

IRISH NEWS.

(*From Our Dublin Correspondent.*)

The Tobacco Plant.—Professor Johnson delivered an interesting lecture on "The Tobacco Plant" in the Science and Art Department, Dublin, on February 14. He showed by limelight views the various stages through which the plant passed, from the seed to the cigar, and explained the conditions necessary to secure a perfect leaf. The climatic influences in Ireland were, he said, unfavourable for the successful propagation of the plant, and it was a question whether the Irish tobacco growing industry could ever compete with foreign labour. The lecture dealt chiefly with the botanical aspect of the plant.

Oxygen, the Breath of Life.—Professor Lorrain Smith, a well-known Ulster chemist, has delivered a lecture at the Royal Dublin Society on the different ways in which oxygen affects living matter. It was shown that oxygen as a free gas was poisonous to certain bacteria, to others it was indifferent until a pressure of from three to four atmospheres had been reached. When the pressure of oxygen was increased to over one atmosphere the lungs became inflamed; when it was increased to three, poisonous effects were produced. In conclusion, the lecturer compared the various forms of living organism in relation to oxygen pressure, showing that the range of pressure which was sustained over the various classes of animal life extended from zero in certain forms to 127 atmospheres in the case of deep sea fish.

The Local Government Board has called the special attention of the Belfast Poor-Law Guardians to the excessive cost for medicines and surgical appliances supplied to that Union. It is pointed out that the expenditure for extra or non-official drugs has gone up from £376 for six months in 1899 to £1,014 for the corresponding period of 1901-2. The cause is stated to be due to lack of supervision over the bills, due to the discouraging of the medical officers by the Guardians in the matter of checking. The necessity of giving the doctors a free hand is urged as a remedy for the evil.

At the Gorey Petty Sessions, on February 14, a local trader named Doyle was prosecuted under the Food and Drugs Act for having sold a quantity of linseed meal which was not of the nature, substance, or quality of the article demanded. Evidence of the purchase was given, and the certificate of Sir Charles Cameron was submitted, showing that the sample examined consisted of ground oil cake, from which most of the fats and oils of linseed were extracted. Defendant stated that the meal was labelled and sold as American calf meal. It was for cattle only that he sold it. Complainant swore that he asked for linseed meal, and paid 4½d. for 3½ lbs. Defendant was fined 10s. and costs.

The Ulster Amateur Photographic Society, which includes a number of northern chemists, has been favoured with an interesting lecture by Captain Gilston, a former member of the Society, on "Twelve Months in Lagos," in the course of which he referred to Jeton Ode, the home of the palm oil trade. The palm oil tree furnished mats and thatch from its leaves, the ribs of the leaf produced brooms, its juice furnished palm wine, while the fluff from the fibre was made into tinder, the nuts into palm oil, the kernel of the nut into nut oil, and the shell into beads. An effective way of collecting bad debts was to leave a small-pox patient at the entrance to the hut in which the "bad pay" lived. The lecture was profusely illustrated by limelight views.

Royal College of Science.—Mr. William Johnston, M.P., has been informed by the Chief Secretary for Ireland that the suggestion to transfer from Dublin to Belfast the Royal College of Science is neither practicable nor desirable, that college being a national institution and serving the needs of the whole country.—Mr. William Field, M.P., has been informed by Mr. Austen Chamberlain that he is unable to give any date for the commencement of the building of the Royal College of Science in Merrion Street, Dublin; that the plans have not yet been prepared, and that the building cannot be gone on with until Parliament has made provision for it.

Insurance Case.—The Master of the Rolls, Dublin, had before him on February 19, the case of the representatives of the late Mr. W. Bloomfield Murray, L.P.S.I., proprietor of the Stephen's Green Pharmacy, Dublin, *v.* the Ocean Accident Insurance Company, which was submitted to him by consent to decide whether the representatives of deceased were entitled to receive £1,000 for which a policy had been taken out with the company. A coroner's jury had found that death was due to the accidental fracture of the spinal column. Mr. Murray died on December 20 last, and on either the night of the 18th or morning of the 19th of same month he met with an accident, which the representatives alleged was the cause of his death, his neck being broken by a fall downstairs. The Insurance Company contended that it was impossible the injuries as stated could have been the cause of his death, as he could not have lived so long after sustaining them, and, in point of fact, he was able to walk and cycle subsequent to the accident. A number of medical witnesses were examined. The Master of the Rolls gave judgment for the plaintiffs, but without costs, observing that it was one of the most curious cases he had ever met with.

MISCELLANEOUS NEWS.

Readers are requested to send items of local news of general pharmaceutical interest. When newspapers are sent, the passages of interest should be marked.

Carbonic Acid for Clearing Ships of Rats.—The Marseilles authorities, states the Paris correspondent of the *Morning Leader*, have long been troubled by the numbers of rats with which the ships that come to port are infested. The rats themselves are infected with plague brought from foreign ports. Sulphuric acid is worse than useless, as it damages the cargo and the rats do not wait to sniff at it, but escape to land along the cables. Traps, of course, the rats smile at. Now, however, a new weapon has been forged to the fight. All that is necessary is to turn carbonic acid gas into the ship. Its weight causes it to sink to the bottom of the vessel, where it does no harm to the cargo, and in half an hour there is not a rat left alive. The gas is then pumped out, and the victors go down to collect the slain.

Lead Poisoning in Earthenware and China Works.—A Parliamentary paper [61], just issued, contains a return of the cases of lead poisoning reported as occurring in earthenware and china works during the years 1899, 1900, and 1901, with, for purposes of comparison, the corresponding figures for all other industries under the Factory and Workshop Acts; the number of cases in the several classes of works, and in the various processes, and other particulars. From this it appears that there were 249 (128 male and 121 female) cases of lead poisoning reported as occurring in earthenware and china works during 1899; 200 (95 male and 105 female) cases in 1900; and 106 (57 male and 49 female) cases in 1901. For the same periods the corresponding figures for all other industries under the Factory and Workshop Acts were respectively 1,009 (942 male and 67 female) cases in 1899; 858 (789 male and 69 female) cases in 1900; and 757 (715 male and 42 female) cases in 1901. These totals do not include 199 cases among house painters in 1900 and 169 in 1901 not under the Factory and Workshop Acts; the total for 1899 includes at least 50 such cases. The tables of the cases of lead poisoning in earthenware and china works show that glost placers, dippers, dippers' assistants, and ware cleaners were most affected. Another table included in the return gives the number of persons suspended by the certifying surgeons for the Hanley, Burslem, Tunstall, and Stoke districts from working in dangerous processes, and a note states that 17 out of the 32 suspensions in the Burslem district in 1899 and 13 out of the 33 suspensions in 1900 were permanent. Twenty-one of the total number of suspensions—82—in the four districts in 1901 were permanent.

The Sale of Insecticides.—Every retailer of provisions is aware that he must exercise more or less vigilance over his purchases from the wholesaler, and also afterwards as regards some commodities, if he wishes to prevent the food and drug inspectors from making a case of him. But as regards the Sale of Poisons Act he has reasonably supposed that he need not concern himself, his legal duty being just to leave that branch of business in the hands of the duly qualified chemists and druggists. The latter semi-professional tradesmen, however, through a society which they have formed for the special purpose of guarding their special privileges in the sale of dangerous drugs, have obtained from the Newcastle-under-Lyme Borough Bench a decision which, if supported by the High Court, before which it is to be taken, would extend widely the range of commodities which must not be sold without the poison label. The tradesman in this instance had sold a strong solution of tobacco, to be sprayed over plants as an insecticide. The liquid was in an ordinary wine bottle, without the poison label; and a man took a drink of it by mistake and died. The vendor was proceeded against for selling poison unlabelled; and the magistrates, whilst "recognising the importance of the case," and granting that it was a proper one for appeal to the High Court, were unanimous in inflicting a fine. The solicitor for the defence may have rather overdone the vigour of his protest in contending that, if this is the law, every pound of paint containing white lead must henceforth be labelled "poison"; but there are certainly many commodities besides tobacco juice which, though poisonous, are sold in the ordinary way of trade without the poison label, simply because it seems hardly possible that anybody can mistakably swallow them. In regard to such substances, even if the poison labelling were enforced to the utmost extreme, the practical responsibility for avoiding accident should surely rest with the purchaser and user of the article rather than with the vendor.—*Bradford Observer.*

Agriculturists and the Sale of Poisons. Considerable inconvenience to agriculturists having been caused by the judicial interpretation of the law regulating the sale of poisons, a committee has been appointed by the Privy Council to inquire into the operation of the Pharmacy Act, especially with regard to the sale of such articles as sheep dips, weed-killers and insecticides, most of which contain arsenic or other scheduled poisons. The action of agriculturists in this matter follows that taken by traders, who complain that the restrictions on the sale of poisons have interfered with their necessary use in manufactures and the arts. The proposed inquiry cannot fail to be of great interest, not only to farmers and horticulturists, but also to the general public, who, of course, view the subject from different standpoints. That there is need of some check upon the indiscriminate sale of poisons and of some protection against the dispensing of poisonous drugs by unqualified persons may be frankly conceded; but it never was intended that an Act passed with these objects should be so construed as to confine to a particular class the sale of articles of general use in agricultural and other industries, merely because such articles happen to consist wholly or in part of scheduled poisons. To do so is to extend the operation of a useful enactment far beyond the scope indicated by its preamble. Unfortunately the Act is so worded that it cannot certainly be said that the interpretation placed upon it by the Courts is wrong, and it must be admitted that this subject is a difficult one to deal with. But the collective wisdom of the committee appointed to consider and report to the Privy Council should be equal to the task of framing an amendment of the Act which, while securing the primary objects with which it was passed, shall not unduly hamper the interests of agriculture and trade.—*Agricultural Gazette.*

SCHOOL AND COLLEGE NEWS.

Imperial College of Chemistry.—On Friday, February 28, the students of this College, accompanied by the principal, Mr. Frederick Davis, viewed the operations conducted at the Mint, and were fortunate in seeing half a ton of molten bronze poured from a crucible into moulds of convenient size for "bar bronze," the bars being subsequently passed between rollers under a pressure of thirty tons, to form metal of sufficient thickness for cutting the required size for pence and halfpence respectively. The pieces of metal are then brightened by a sulphuric acid bath and rotated in beech sawdust, after which they are fed into a machine to form a rimmed edge at the rate of 700 per minute. Finally each piece receives a thirty-ton blow, which strikes the obverse and reverse inscriptions at one move of the machine piston. The coining of silver moneys is carried through in the same manner. Before leaving, the students were shown the striking of the African and Coronation medals in silver, the former for the battle of Belfast, with bar and ribbon. Each medal contained one ounce of silver.

INTER PHARMACY FOOTBALL LEAGUE.—The last League fixture—Metros. *v.* Square—was played at Shepherd's Bush on Saturday last, when the Metros. won a splendid game by four goals to nil. Throughout the game the Metros. showed a distinct superiority, although no goal was scored until a quarter of an hour before time. For the Metros. Perry played a fine game in goal, and Buxton, Barker and Edwards are worthy of credit for good play at other parts of the field. Barker scored two goals, Carter 1, and Kendall 1. Teams:— Metros.: Perry; Buxton, Smith; Lacey, Sampson, Douthwaite; Carter, Kendall, Williams, Barker, Edwards. Square: Neathercoate; Martin, Paterson; Collett, Williams, Moore; Mitchell, Allen, Hills, Hewlett, Hirst.—It has been decided to give one medal of the Inter-Pharmacy League to each member of the Square Football Club who has played in three or more League matches. The following have therefore been considered eligible for one medal each:—Messrs. Mitchell (Captain), Martin, Paterson, Collett, Williams, Moore, Hines, Stranach, Cleghorn, Hewlett, Hirst (Secretary). Of these Messrs. Mitchell, Martin, Paterson, Collett, Williams, Moore and Hewlett have played in six; Messrs. Cleghorn and Hirst in five, Messrs. Hines and Stranach in four and three matches respectively.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.—A social evening was held on Wednesday, March 5, in the Lecture Theatre, at 17, Bloomsbury Square (by permission of the Pharmaceutical Society). There was a very good attendance of visitors and students, amongst the former being Mr. Walter Hills, Professor H. G. Greenish, Mr. W. Lamond Howie, and other well-known pharmacists. The chair was taken at eight o'clock by the President, Professor J. Reynolds Green, F.R.S., D.Sc. The ordinary business of the Association was postponed until the next meeting. Professor Norman Collie, F.R.S., then gave a lecture upon the Lofoden Islands, which, in company with a few friends, he visited during the summer vacation last year. The lecture was illustrated with many excellent lantern slides from photographs taken by the Professor, the account of whose tour in the land of the midnight sun was followed with the greatest interest and appreciation by all present. Professor Collie showed views of and described several of the mountain peaks in the islands, some of which he and his party were the first to scale, whilst others were found to be quite inaccessible, although not more than about 3,500 feet in height. He also told of a tremendous downfall of rain which occurred in the islands, and of the wonderful way in which the fishing fleet assembles when the report spreads that the herrings are in any particular fjord; many other incidents of camp life and travel were discoursed upon. At the conclusion of the lecture the Chairman remarked that he did not quite know whom he ought to congratulate the more, Dr. Collie on having spent such a pleasant vacation, or the audience on being made so familiar with the Lofoden Islands and their beautiful scenery, without any of the dangers of mountaineering or the discomforts of rain-storms which lasted three days. Mr. Walter Hills said that he had thoroughly enjoyed the instructive lecture they had just heard, and felt sure everyone else had done the same; he had, therefore, great pleasure in proposing a hearty vote of thanks to Professor Collie. This was seconded by Mr. R. A. Robinson, jun., who observed that no meeting of the Students' Association had been so much looked forward to as the present one. The vote of thanks was carried amidst prolonged applause, and after Professor Collie had responded to it the meeting terminated.

SOCIETY AND ASSOCIATION NEWS.

READING AND DISTRICT CHEMISTS' ASSOCIATION.—A meeting of this Association was held at Reading College on February 27, when an interesting paper was read by Mr. F. F. A. Tunbridge on "The Chemist as a Mechanic." A discussion followed.

WOLVERHAMPTON AND DISTRICT CHEMISTS' ASSOCIATION.—At a meeting of this Association held on March 3 it was agreed, on the suggestion of the President, Mr. Phillips, that the Association should become affiliated with the Federation of Local Pharmaceutical Association.—Mr. Gibson then opened a discussion on Mr. Paterson's paper read at Dublin, July 31, 1901. He said the apprenticeship question was very much in evidence at the present time, and he knew it was difficult to get hold of the right sort of youth as an apprentice. He ascribed that to the present system of education and the lack of a suitable foundation on which to build by hard work and energy a superstructure that would enable the student to do credit to himself and his instructors. Mr. W. Lyon had described the ideal conditions of apprenticeship in the *Pharmaceutical Journal* for December 21 last, but in practice the apprentice was taken solely to do away with the expense of an assistant, his master taking no interest in seeing that his education was going on the proper lines. The abolition of the Preliminary Examination and the raising of the standard of the Minor should help towards a better state of things, and it might be better if the latter were divided and a compulsory curriculum in force. But he could not see with Mr. Paterson in what way chemists could look for support from Government or any source except the Pharmaceutical Society.—Mr. Phillips agreed with Mr. Gibson's remarks, especially that the raising of the Minor should have been taken with a curriculum. The students could attend local technical schools, as a large amount of the work required for the Minor is taken at the technical schools. It ought to be compulsory for apprentices to pass their Preliminary Examination before apprenticeship begins.—Several other members also spoke and expressed approval of Mr. Gibson's remarks.

INSTITUTE OF CHEMISTRY.—At the twenty-fourth annual meeting of the Institute of Chemistry, held at 30, Bloomsbury Square, London, on Monday, March 3, Professor J. Millar Thomson, LL.D., F.R.S., President, in the chair, the President delivered an address dealing with work of the Institute during the past year. He stated that the roll of members has increased by thirty-six, making the total of 1,040 Fellows and Associates at present on the Register, while there are 130 students in course of training at the colleges and institutions recognised by the Council of the Institute. The President remarked on the higher percentage of passes in the recent examinations, which he considered pointed to the fact that the thoroughness of the examinations was more fully realised by those preparing for them. He also mentioned the establishment of an examination in biological chemistry, by means of which the Council hope to encourage analytical chemists to pursue the study of bacteriology, and thus be able to deal with chemical work involving bacteriological knowledge. The examination is specially suited for such as intend entering the practice of chemistry in its relationship to the chemistry and bacteriology of food, water, sewage, and effluents, and the practical applications of biological chemistry to such industries as brewing, tanning, etc. He called attention to the fact that the Institute held an examination in Ireland in July last, and that the Council hope in future to arrange for a regular examining centre in Dublin. During the past year the Council have ceased to recognise the Junior, Second Class, and Lower Grade, Professional Preliminary Examinations of various examining bodies, and they have now under reconsideration the subjects which shall be compulsory to persons intending to proceed to the examinations of the Institute. The Council also reported to the members that during the past year they had addressed to the Local Government Board, and to various county and borough authorities communications with reference to the combination of the two appointments of medical officer of health and public analyst. It has been pointed out that a public analyst requires special training and experience in analytical chemistry far beyond that which is usually acquired by medical practitioners in the course of their professional education. Also that where the appointments are proposed to be combined, the selection of candidates for both positions is necessarily limited. The Council hold the opinion that under the provisions of the Sale of Food and Drugs Act of 1875, it was intended that the medical officer of health and the public analyst for a borough or district should be two distinct persons, inasmuch as the medical officer is one of those officers empowered by the Act to submit suspected samples for analysis. The qualifications and examinations of the Institute are accepted by the Local Government Boards for public analytical appointments, and it is the desire of the Council that no lower standard of chemical training and experience than that prescribed by the Institute of Chemistry, should be accepted for such important and responsible public appointments as those of public analysts under the Sale of Food and Drugs Act.

MARKET REPORT.

London, Thursday, March 6, 1902.

Business in Drugs and Chemicals, and, in fact, generally, has been dreadfully dull during past week, and really things appear to be going from bad to worse. With the exception of a better feeling in Quinine and an advance to-day in price of Camphor, there are no changes of any special importance to record. On the other hand, prices of most articles in which our readers are interested have a decidedly dull tendency; while there really would appear to be no bottom to price at which some chemicals of German manufacture are being offered; while worst of all the demand for same appears to be getting slacker and slacker. We allude to such articles as Phenazone, Acetanilide, Chloral Hydrate, Phenacetin, Sulphonal, Salicylates, Salol, etc. Lack of space prevents us from repeating quotations. We may mention, however, that with above-named exceptions, same are nominally without change.

THURSDAY'S DRUG SALES.

To-day's Drug Sales comprised 17 catalogues, some of which were fairly long, but the greater part of the goods offered failed to sell, in fact, partly perhaps owing to the fog, but chiefly, we fear, in consequence of the unhappy condition of business generally, the sale may as a whole be regarded as a fiasco. We give particulars below as far as there are any particulars of sale to give.

ALOES.—26 cases Cape part sold at 33s. per cwt. for fair bold bright down to 26s. per cwt. for drossy.

ARECA NUTS.—6 bags medium quality and rather wormy sold at 20s. per cwt.

BUCHU LEAVES.—18 bales were taken out at 8d. per lb. for rather yellowish rounds. Other 22 bales were held on about same parity.

CALUMBA ROOT.—40 bags medium sorts were bought in at 13s. per cwt. Other 103 bags low sorts sold at 9s. to 9s. 6d. per cwt. for the sound and at 8s. 6d. for 1CSD.

CANELLA ALBA.—14 bales were bought in 45s. to 50s. per cwt.

CARDAMOMS.—13 cases Ceylon only part sold at 10d. to 11d. per lb. for small low quality. Other 59 cases ditto were also all bought in. Of 5 cases seeds, 3 cases sold at 1s. 7d. per lb., and 1 case at 1s. 9d. for better quality. 6 cases all sold at 1s. 10d. per lb. for good heavy Ceylon Mysores, at 1s. 2d. per lb. for second size, and at 1s. 8d. per lb. for seeds. Of other 47 cases fine bold sold at 3s. 2d. per lb., 2 cases mediums at 2s. 2d. Other 82 cases sold at 2s. 6d. per lb. for medium bold Ceylon Mysores downwards, according to size and condition. Other 57 cases sold at 2s. 5d. per lb., downwards.

CASCARA SAGRADA.—30 bags of fair quality were taken out nominally at 30s. per cwt.

CASTOR OIL.—30 cases East Indian sold cheaply at 2 15/16d. per lb.

CHALMOOGRA OIL.—8 cases, each 2 tins, of 39 lb. of yellowish colour were bought in nominally at 2s. 6d. per lb.

CHIRETTA.—65 bales were taken out at 2½d. per lb.

COCA LEAVES.—13 cases Ceylon were all bought in. Other 8 cases sold at 9d. to 9¼d. per lb. for sound, and 1 bale damaged at 3d. per lb. Of other 23 bales Truxillo 8 bales sold at 10d. per lb.

COWAGE.—2 cases sold at 1d. per oz.

CROTON SEEDS.—35 bags Ceylon sold at 25s. 6d. per cwt.

CUMMIN SEEDS.—30 bags Malta were taken out nominally at 36s. per cwt.

DILL SEEDS.—25 bags of fair quality, but somewhat chaffy, were taken out at 13s. per cwt.

DRAGON'S BLOOD.—Of 10 cases, only 1 case sold, subject to owner's confirmation, at £10 12s. 6d. per cwt. for dull lump.

ERGOT OF RYE.—4 bags fair Spanish sold at 1s. 6d. per lb. Other 12 bags Spanish were taken out at 1s. 9d. per lb.

ESSENTIAL OILS.—51 cases Eucalyptus were all bought in at 1s. 2d. per lb. for fair, and at 11d. per lb. for commercial quality of oil. Other 9 cases, showing on Umney's analysis 64-65 per cent. of Eucalyptol, were taken out at 1s. 6d. per lb. Of 3 cases Lemongrass 1 case sold at 4d. per oz.

GALLS.—24 cases Japan were bought in at 60s. per cwt.

GUAZA.—35 robbins part sold at 2s. 3d. per lb. for tops. 26 packages siftings did not sell.

GUM GALBANUM.—7 packages were taken out nominally at 9d. per lb.

GUM MYRRH.—Of 46 bags good sorts only 5 bags sold at 70s. per cwt.

HONEY.—Of 65 large Jamaica a few lots sold at 16s. to 18s. per cwt. in barrels, two lots of 10 cases each 20 tins, offered without reserve, selling at 14s. and 14s. 6d. per cwt. respectively. Other 88 packages Jamaica sold 15s. for kegs, 16s. to 17s. per cwt. for barrels, and 16s. to 19s. for tins and cases. 36 cases Honolulu were taken out nominally at 21s. per cwt. 20 cases Australian also did not sell. 30 cases Californian sold at 30s. per cwt., subject to owners' confirmation.

INSECT FLOWERS.—1 bale closed Flowers was bought in at 160s. per cwt.

IPECACUANHA.—Of 19 bales Matto Grosso only a few bales sold at 10s. to 10s. 1d. per lb. Other 20 bales and 2 casks Rio only realised 9s. 9d. to 10s., the 2 casks going at 9s. 1d. and 9s. 3d. per lb. respectively. 4 bales Carthagena were taken out at 4s. 9d. per lb.

JALAP.—Of 21 bales small but fairly heavy tubers only 5 bales sold cheaply at 5½d. per lb.

KOLA NUTS.—24 bags West Indian were taken out at 2½d. per lb. for common, and cut and at 6d. per lb. for good quality.

MUSK.—1 caddy nett about 25¾ ozs. Tonquin sold at 43s. per oz., subject to owner's approval.

MUSK SEED.—1 case of fair quality sold at 1s. 2d. per lb.

NUX VOMICA.—40 bags Cochin were taken out at 10s. 6d. per cwt.

ORANGE PEEL.—Of 11 packages 4 cases sold cheaply at 4d. per lb., subject to owners' approval, for fair bright peel, the balance, consisting of dark thin cut, offered without reserve, failing to sell.

ORCHELLA WEED.—62 bales sold at 13s. per cwt.

QUININE.—5 cases, each 10 × 100 oz. tins, Sulphate, presumably Zimmer's make, were taken out at 1s. 2d. per oz.

PATCHOULI LEAVES.—12 bales were bought in nominally at 6½d. per lb.

RHUBARB.—Of 58 cases, only 2 cases bold flat high dried sold at 10d. per lb., 2 cases medium round Canton at 1s. 9d. per lb., and 1 case ditto showing good fracture at 2s. per lb. 23 chests wormy offered without reserve sold at 5d. to 5½d. per lb. for dull but fairly bold flat, and at 3¼d. to 3¾d. per lb. for dull rough brown round high dried.

SAFFRON.—3 cases Spanish were taken out at 22s. per lb.

SARSAPARILLA.—3 bales native Jamaica sold at 9½d. per lb. and 1 bag ditto at 9d. Of other 44 bales Jamaica only 2 bales sold at 1s. 2d. per lb. for ICCD. Other 21 bales ditto, all more or less damaged, sold at 11d. to 1s. per lb. Of 3 bales Lima only 1 bale, sea damaged, sold at 1s. per lb.

SENNA.—6 bales low common Tinnivelly sold at ¾d. to 1¼d. per lb., and 7 bales darkish pods at ¾d. to 1d. per lb.; other 65 bales, chiefly rubbish, and partly offered without reserve, sold at about same parity: other 22 bales of similar quality sold at ¼d. to 1d. per lb. 18 bales sold at 4¾d. per lb. for fair to good A grade, and at 3½d. per lb. for smaller leaf; other 149 bales sold at from 1¼d. per lb., and pods at 2¼d. downwards. 43 bales Alexandrian, consisting of broken leaf and siftings, did not sell. 3 bales good pods also failed to find a buyer.

STAR ANISEED.—6 cases offered without reserve realised 55s. per cwt.

TAMARINDS.—35 barrels were all bought in at 12s. to 13s. per cwt. Other 16 barrels West Indian at 16s. per cwt.

TURMERIC.—30 bags wormy finger Madras were all bought in, 1 case wormy bulbs realising 17s. 6d. per cwt.

VANILLINE.—150 tins, each 1 oz., of French make did not sell, and were taken out nominally at 1s. 9d. per oz.

WAX.—2 barrels Jamaica realised £8 5s. per cwt. Other 1 case sold at £8. Other 8 packages ditto at £8 to £8 5s. per cwt. 28 packages Mozambique sold at £6 12s. 6d. to £7 per cwt. Of 51 blocks Zanzibar only 5 blocks sold at £6 12s. 6d., subject to owner's confirmation. Other 16 packages ditto sold at £7, and 2 bags at £6 17s. 6d. Of other 53 bales ditto only 4 bales sold at £6 10s. per cwt. 5 cases Italian were bought in at £7. 42 cases white Calcutta also did not sell. Of 30 cases fair Japan 10 cases sold at 35s. per cwt.

YARROW.—5 bales were taken out at 16s. per cwt.

ZEDOARY ROOT.—1 bag was bought in at 20s. per cwt.

DIARY OF THE WEEK.

Monday, March 10.

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION, Church House, Church Street, at 8.30 p.m.—Annual meeting.

SOCIETY OF CHEMICAL INDUSTRY, Burlington House, Piccadilly, W., at 8 p.m.—"Birmingham Sewage and its Treatment," by F. R. O'Shaughnessy; "Remarks on the Technical Examination of Glue," by E. G. Clayton.

WEST OF SCOTLAND COLLEGE OF PHARMACY, Alexandra Hotel, at 9 p.m.—Annual Dinner.

Tuesday, March 11.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, London, W.C., at 8 p.m.—Evening Meeting.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION. — Conversational Evening on Trade Topics.

HUDDERSFIELD AND DISTRICT CHEMISTS' ASSOCIATION, at 8.30 p.m.—Ordinary meeting.

Wednesday, March 12.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, London, W.C.—Library, Museum, School and House Committee.

CHEMISTS' MANAGERS' AND ASSISTANTS' SOCIETY, Horse Shoe Hotel, Tottenham Court Road.—Annual Dinner.

MANCHESTER PHARMACEUTICAL ASSOCIATION. — "Methods of Sight Testing," by J. C. Kidd.

NEWCASTLE-UPON-TYNE AND DISTRICT CHEMISTS' ASSOCIATION, Hotel Metropole, at 8.30.—Microscopical evening.

PUBLIC AND POOR LAW DISPENSERS' ASSOCIATION, St. Bride's Institute, Bride Lane, E.C.—"Smoker."

Thursday, March 13.

CHEMISTS' ASSISTANTS' ASSOCIATION, 73, Newman Street, W., at 8.30 p.m.—Paper by F. C. Shrubsall.

CHEMISTS' MANAGERS' AND ASSISTANTS' ASSOCIATION, Horse Shoe Hotel, Tottenham Court Road, at 9.30 p.m.—Special general meeting.

Friday, March 14.

ROYAL INSTITUTION, Albemarle Street, Piccadilly, W., at 9 p.m.—"Magnetism in Transitu," by Professor Silvanus B. Thompson.

Saturday, March 15.

ROYAL INSTITUTION, Albemarle Street, Piccadilly, W.—"Some Electrical Developments" (Lecture V.), by the Right Hon. Lord Rayleigh.

Pharmaceutical F.C. *v.* Hampstead.

Metropolitan College F.C. *v.* Kensington Rangers.

PUBLICATIONS RECEIVED.

FORMULAIRE DES MEDICAMENTS NOUVEAUX POUR 1902. Par H. BOCQUILLON-LIMOUSIN. Avec une Introduction par HENRI HUCHARD. Pp. 324. Price 3fr. Paris: J.-B. Bailliere et Fils, 19, Rue Hautefeuille près du Boulevard Saint-Germain. 1902. From the Publishers.

ON THE CHEMISTRY AND TOXICOLOGY OF NERIUM ODORUM, with a description of a newly-separated active principle. By RAI CHUNILAL BOSE BAHADUR, M.B., F.C.S. Part I. and II. Reprinted from the *Indian Medical Gazette*, Vol. XXXVI. (Nos. 8 and 11, November, 1901.) From the Author.

REPORT OF THE COUNCIL OF THE METROPOLITAN BOROUGH OF WANDSWORTH for the year ended March 31, 1901, to which is appended the Annual Report of the Medical Officers of Health for the year 1900. Pp. 151. London: Potter, Batten and Davies, 23, The Pavement, Clapham Common, S.W. 1901. From the Town Clerk.

THE CALENDAR OF THE PHARMACEUTICAL SOCIETY OF IRELAND, 1902. Vol. XXVI. Pp. xiv. + 216. Price 1s. 6d. Dublin: Pharmaceutical Society of Ireland, 67, Lower Mount Street. From the Registrar.

CHEMISTRY FOR PHOTOGRAPHERS. By CHAS. F. TOWNSEND, F.C.S., F.R.P.S. (Illustrated). Third edition, revised. Pp. 158. Price 1s. net. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C., 1902. From the Publishers.

ON SOME NEW SPECIES OF EUCALYPTUS. By R. T. BAKER, F.L.S., Curator, Technological Museum, Sydney. Also Contributions to a knowledge of the Flora of Australia, Part III., by the same Author. From the Proceedings of the Linnean Society of New South Wales, Part IV., October 31, 1900. From the Author.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Andrews, Atkins, Barrett, Bellamy, Bennet, Bishop, Brown, Butterfield, Coleman, Corfe, Cowdery, Davis, Forret, Gilmour, Hawtayne, Hill, Holt, Hope, Houghton, Johnson, Keen, King, Lewis, Long, Lovatt, Millard, Morrison, Newsholme, O'Halloran, Peck, Pickup, Pilcher, Pittman, Scott, Shaw, Simpson, Smith, Swaffin, Symes, Vance, Walker, Whitehead, Williams, Wynne.

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DEAR SIR, AMESBURY, SALISBURY, WILTS.

In reply to your letter asking my opinion of Antitoxine, I have much pleasure in saying that in Migraine and certain Neuralgias of the face I have found the drug almost a specific, and in every case there has never been any sign of cardiac depression, rather the reverse; a "feeling of warmth all over the body," as they have expressed after taking it. I always have it in my surgery, for use in the cases above-mentioned, having up to the present used several ounces of it. Just now I am exhibiting it in a patient with high fever from Acute Cystitis, and have every confidence that it will act as an antipyretic in conjunction with other drugs appropriate for this disease. You may make use of my name if you wish it, as I think the drug should be more popularly known by the Medical Profession.

I remain,
(Signed) Yours faithfully,
HENRY BROWNE, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A. Lond.

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Notices to Correspondents.

ALL COMMUNICATIONS FOR THE 'PHARMACEUTICAL JOURNAL' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street Lincoln's Inn, London.

CONTRIBUTIONS sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

Pharmaceutical Journal

SATURDAY, MARCH 15, 1902.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

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Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Platinum Utensils and scraps for cash.—P. Rowsell, 9, Derwent Grove, Dulwich.

Squire's Companion; latest edition; state lowest price post.—Holding, Chemist, Barnsbury, N.

Fernie's "Herbal Simples," second edition.—Particulars and price to A. R., Pharm. Journal Office, 8, Serle St., W.C.

OFFERED.

100 G. B. Kent Preference Shares.—M., 30, Tranquil Vale, Blackheath, S.E.

Sutton's Volumetric Analysis, fourth edition, price 6s.—J., 155, Lea Rd., Wolverhampton.

Photographic Mounts. 2,500 cabinets, 25s.; 2,000 C.D.V.'s, 7s. 6d. to clear.—Edward Peck, East Dereham.

Offers for 27 gold-labelled 30-oz. blue plug-stoppered syrups; also number of 1-gallon plain glass bottles.—Smith, Chemist, Stroud.

What Offers? Harmsworth Magazine and Flag to Pretoria, both complete, up to date, and in good condition.—J. Duthie, 137, Queen's Crescent, N.W.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

OFFERED—*Continued*

Culpeper's Pharmacopœia Londinensis, 1653; Year Books of Pharmacy, 1872 to 1891; Chemist and Druggist, 1871 to 1885; Pharmaceutical Journal, 34 vols.; quantity of other scientific Books; Microscopes; Lantern; Slides; Camera; "Major" Materia Cabinet.—Crook, 240, Portland St., Southport.

Ping Pong.—Splendid set of latest pattern Table Tennis, consisting of pair of handsome ash posts, with patent table attachment, net, balls, and two patent grooved face wood bats; new; only 4s. 6d. free; also pair of extra wood bats, 1s, 3d. free; bargains; approval.—F. Ralph, Cambridge House, Lakenheath, Suffolk.

Fish Knives and Forks.—Six pairs very handsome, best silver plated fish knives and forks, with beautiful sterling hallmarked silver handles, by Mappin, in elegant case, only £2; worth £4. Also pair of silver plated fish servers to match, only 18s. 6d.; worth 38s. Both new. Presents. Approval before payment willingly.—Mr. Ralph, Cambridge House, Lakenheath, Suffolk.

36 doz. Allcock's porous plasters, 5s. 6d. per doz.; 6 doz. 6d. Sansom's nursery-oil, 3s. per doz.; 24 doz. 6d. Adams' extract herbs, 2s. 3d. per doz.; 12 doz. 6d. Bond's marking-ink, 1s. 9d. per doz.; 6 doz. 1s. ditto, 3s. 3d. per doz.; 12 doz. 9d. Sand's liver-seeds, 6s. 3d. per doz.; 12 doz. 1s. Vin Vitæ, 7s. 9d. per doz.; 3 doz. 2s. ditto, 15s. 6d. per doz.; 3 doz. 1s. 1½d. Valnera tea, 6s. per doz.; 3 doz. 2s. 6d. ditto, 18s. per doz.; 6 doz. 1s. 1½d. Storcroft's throat-cure, 8s. 6d. per doz.; 3 doz. 6d. Saltunia, 3s. per doz.; 3 doz. 1s. 1½d. Kerr's blood-drops, 8s. 6d. per doz.; 3 doz. 1s. 1½d. Uno's Indian balm, 7s. 9d. per doz.; 6 doz. 4d. Peacock's ovaline soap, 2s. per doz.; 3 doz. 2d. ivory soap, 1s. 4d. per doz.; 3 doz. 3d. Nelson's citric acid, 1s. 3d. per doz; 1 doz. 6d. ditto, 2s. per doz.—Howell & Co., 125, King St., Oldham.

A Copy of this Inset is inserted in every *Pharmaceutical Journal* issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at the Publishing Office, 8, Serle St., London, W.C., and at more than two hundred addresses in the United Kingdom; a list of these addresses was published last week.

Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words or less, 6d.: two initials or two figures counting as one word.

PART-TIME Assistant or Improver for good-class Retail and Dispensing business. — Particulars to Maitland, 8, Torrington Place, W.C.

COMPETENT Assistant, about 25; indoor; for good Dispensing and Retail business.—Apply, giving references, &c., to Shaw, Harborne, Birmingham.

H. KEMP, Chorlton-cum-Hardy, Manchester, requires qualified Assistant. Applicants will oblige by sending full particulars and photo (to be returned).

JUNIOR or Improver, one used to quick cash store trading preferred.—State experience, age, height, salary required (outdoor), to Wand, Haymarket, Leicester.

JUNIOR or Improver wanted (indoor); good chance to learn photographic.—Apply, with usual particulars, to Muskett, Guildhall Pharmacy, Rochester.

AN Assistant or Improver wanted; good references indispensable.—State full particulars and enclose photo to G. Crawshaw, Pharmacist, Hyde Park, Leeds.

GUY'S HOSPITAL.

WANTED, Dispensers.—Apply by letter only, stating age, experience, qualifications, and salary required, to the Pharmacist.

KENSINGTON.—Junior, about 22, with Dispensing experience, in good-class Retail; abstainer preferred.—Full particulars, with photo, to R. S. Dampney, 70, Warwick Rd., Kensington, S.W.

WESTON-SUPER-MARE.—A smart Junior, accustomed to high-class Dispensing.—State full particulars, with salary (indoors), Ernest Widgery, Pharmaceutical Chemist, The Central Pharmacy.

MARRIED qualified Assistant, good experience; accurate Dispenser, for good-class Dispensing and Family business.—Apply, with references, salary required, &c., Velox, Messrs. Hodgkinson, Clarke & Ward, 101, Whitecross St., E.C.

QUALIFIED Assistant required, about 27, of good address and experience, for good class Family and Dispensing business; two kept.—Apply, with full particulars, stating salary required, to Senior, c/o Hearon, Squire & Francis, 38, Southwark St., S.E.

LONDON, S.E.—Wanted at once, a thoroughly competent Assistant, accustomed to high-class business; must be a good Dispenser and Counterman.—Address, Mr. Powell, 116, Denmark Hill, S.E.

LONDON, W.—Wanted, a Junior Assistant, about 22 years of age, for a first-class Dispensing business; with qualification if possible.—S. J. Weston, Pharmaceutical Chemist, 151, Westbourne Terrace, W.

PLUMSTEAD, S.E.—Outdoor Junior Assistant required, for good-class Dispensing and Photographic business.—Apply, with usual particulars, to A. Goldthorpe, Chemist, Herbert Rd., Plumstead, S.E.

GREENWICH.—Part-time Assistant required; would suit Minor student; comfortable home; good-class Dispensing and Retail.—Apply, with full particulars, to E. Winzer, M.P.S., 11, Nelson St., Greenwich, S.E.

ESHER.—Junior, with knowledge of Photography, required, for good-class Dispensing business; 2 hours daily allowed for reading; Sunday duty nominal.—Apply, with full particulars and carte, to Chapman, Chemist, Esher, Surrey.

Assistants Wanted—Continued.

MAIDSTONE.—Indoor Junior Assistant, about 21, wanted, for good class Retail and Dispensing business; 3 kept.—Apply, stating the usual particulars as to age, height, references, salary and photo, to Stonham & Son, Maidstone.

MESSRS. DUNNILL & PATER, Chemists, Broomhill, Sheffield, require competent Junior for Light Retail and Dispensing business; good Dispenser essential.—State age, salary required (outdoor), and references, enclose photo (to be returned).

QUALIFIED Assistant (outdoor) wanted in a good-class Retail and Dispensing business; knowledge of photography preferred; short hours. — State age, height, experience, salary required, &c., to J. C. Shenstone, 13, High St., Colchester.

MARRIED Assistant.—A quick and capable man whose references will bear the strictest investigation, and who is desirous of a permanency, is wanted to live over shop in a South Coast town.—Apply to Mason, Pharm. Journal Office, 8, Serle St., W.C.

LONDON, S.W.—After Easter, Assistant, with some experience in Dispensing, wanted; good-class modern Retail and Dispensing business; not under 22; comfortable berth.—Write or call, Keith Longstaff, The Central Pharmacy, 811, Fulham Rd., S.W. (a little beyond Walham Green).

LANCASHIRE.—Wanted, qualified Assistant, accustomed to mixed business; a reliable and steady man, not over 25 years of age; weekly half-holiday.—State age, salary required (outdoor), references, &c., and enclose photo, to be returned, to Henry Hindle, Chemist, 66, King St., Blackburn.

WESTMINSTER HOSPITAL, S.W. — Wanted, qualified Dispenser, with some previous experience, age about 25; hours 10 to 6; salary commencing £80, with dinner and tea provided.—Apply, with testimonials and reference, between 11 and 12, to A. E. Tanner, Pharmacist to the Hospital.

DISPENSER wanted, Hospital for Women and Children, Leeds, non-resident; qualified; to devote his whole time to the work. Salary, £80, with prospect of advance of £10 per annum for 2 years.—For particulars, apply to Secretary, to whom all applications must be addressed, not later than March 19th.

PARIS.—Wanted, a thoroughly competent Assistant, more especially for the front counter, with occasional Dispensing; one speaking French or having Continental experience preferred; outdoors. — Particulars (age, height, copy of testimonials and photo, to be returned) to Co_2, Bureau 45, Paris, or apply to Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, E.C.

LEAMINGTON PROVIDENT DISPENSARY.

WANTED, a duly qualified Dispenser (male or female), unmarried; salary, £60 a year, with furnished rooms, coal, and gas.—Applications, with recent testimonials, particulars of age, &c., to be sent on or before March 22 next, addressed The Secretary, Provident Dispensary, Leamington.
February 28, 1902.

LONDON, W.C.—Required in a few weeks' time, an outdoor qualified Assistant, speaking French fluently; suitable vacancy for an assistant, aged about 25, returning from the Riviera, who has a fair knowledge of international pharmacy.—Address, stating fullest particulars as to experience, height, and salary required, Pharmacist, Pharm. Journal Office, 8, Serle St., W.C.

VICTORIA CHILDREN'S HOSPITAL,
PARK STREET, HULL (60 Beds).

WANTED, a fully qualified Lady Dispenser; salary, £40 per annum, with board, room, and laundry.—Applications, with copies of not more than three recent testimonials, to be addressed to the Hon. Secs. and delivered at the Hospital by noon on Friday, the 21st inst.

W. D. Theaker, Asst.-Sec.

Applicants might, if convenient, send a photo, which will be returned.

Assistants Wanted—Continued

CALCUTTA.—Wanted at once, a qualified Assistant; age about 24 years; must be able to conduct analysis; first-class opening for a competent man. Salary, 1st year, 275 Rs. per month; 2nd year, 300 Rs. per month; 3rd year, 325 Rs. per month, and 4th year, 350 Rs. 4 years' agreement. Second class passage paid both ways.—Apply by letter to Calcutta, c/o Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

INDIA (N.W. Province).—Wanted, a good Assistant, well up in all branches of a Chemist's business; Minor qualification. Salary, 1st year 150 rupees per month, 2nd year 175 rupees per month, 3rd year 200 rupees per month; free furnished apartments; second-class passage paid out; required to start early in April; candidates must hold undeniable references.—Address, India, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CAPE COLONY.—Wanted, good Assistant, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £150; second year, £160; third year, £170; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, Cape, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified Assistant; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to Straits Settlements, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

SANITARY INSPECTORSHIPS.—Salaries £100 to £250. Numerous vacancies. Permanent appointments. Chemists or Assistants desiring change of occupation should qualify as Sanitary Inspectors. Special Postal Course of Lessons now commencing for London, Liverpool, Leeds, Cardiff, Manchester, Leicester, Newcastle-on-Tyne and Belfast exams. Anyone of average ability can pass. Had over 250 successful candidates, and fully half had no previous knowledge of sanitary matters.—Apply, Robert H. Mushens, Sanitary Science Teacher, Sunderland.

Apprentice

APPRENTICE.—Vacancy for a well-educated Youth in first-class Dispensing Chemist's business at Brighton, in or outdoor; easy hours and time for study; small premium. —Address, C. P. W., c/o Burgoyne, Burbidges & Co., Coleman St., London.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM, qualified; abstainer.—E. Kemp, 11, Cheapside, St. Leonards-on-Sea.

LOCUM, M.P.S.; town or country; disengaged.—W. Smith, 12, Westfield Rd., Surbiton.

JUNIOR, 23, requires situation in London.—J. Wood, 151, Westbourne Terrace, W.

ASSISTANT or Locum; 29; qualified; good general experience; any large town.—Salol, 8, Serle St., W.C.

Engagements Wanted—Continued

LOCUM or Senior; 31; qualified; experienced.—Chemist, 35, Orsett Rd., Grays, Essex.

LOCUM; qualified; 29; abstainer; London experience.—Green, 2, Purser's Cross Rd., S.W.

LOCUM TENENS; experienced Dispenser. — M.P.S., c/o Pharm. Journal, 8, Serle St., W.C.

LOCUM, Manager or Dispenser; qualified. — Somers, 41, Cologne Rd., Clapham Junction.

EVENINGS.—Private coach to Minor, Apothecaries' Hall Students.—M.P.S., 253, Burdett Rd., E.

LOCUM TENENS; 62; active; single; non-smoker.—Mr. Collins, M.P.S., Harbury, Leamington.

QUALIFIED; 28; varied experience; disengaged 21st; permanency.—Cortex, 8, Serle St., W.C.

LOCUM; disengaged till April 2nd; good references.—Snoxell, 75, Woodbridge Rd., Guildford.

DISPENSING or Part-time; Major; 26; good experience. —Clarkson, 73, Lambeth Palace Rd., S.E.

DISPENSERSHIP. — Re-engagement desired. — J. L. C., Chemist, Kilburn Dispensary, 13, Kilburn Park Rd.

MANAGER; qualified; 20 years' experience London and Continent.—Holifield, 151, Westbourne Terrace, W.

QUALIFIED; permanency; London and Continental experience; speaking French.—Calyx, 8, Serle St., W.C.

ASSISTANT; Minor; silver medallist; disengaged; London; outdoors preferred. — Harrington, 45, Bessborough Gardens.

MAJOR; 26; 5 ft. 9 in.; abstainer; West End and provincial experience. — Bathurst, 8, Prestonville Rd., Brighton.

MANAGER; qualified; 26; good varied experience; references *re* past managerships; Provinces; permanency.—Young, Aston, Nantwich.

MANAGER; qualified; varied experience; at liberty; married; permanency.—Alpha, Pharm. Journal Office, 8, Serle St., London, W.C.

UNQUALIFIED; 32; 15 years' experience; Photography; good references; East Coast preferred.—L. Ffrench, 7, West Stockwell St., Colchester.

MAJOR Student (23), seeks part-time engagement in Birmingham, morning or afternoon; good references.—Burns, Water Orton, Birmingham.

QUALIFIED; 25; first-class experience; York district or Yorkshire watering-place preferred.—M.P.S., 66, Lower Kennington Lane, London, S.E.

DISPENSER; experienced; abstainer; 26; single; Apothecaries' certificate; whole or part-time.—Dispenser, Pharm. Journal Office, 8, Serle St., W.C.

MANAGERSHIP or permanency; qualified; experienced; abstainer, highest references; Photography; provinces preferred.—A. J. Paynter, The Manse, Dartmouth.

LADY desires post as Dispenser; Apothecaries' Hall certificate; would give a month's services free for experience. —Miss O'Reilly, 75, Marlborough Rd., Bowes Park, N.

Continued on next page.

Engagements Wanted—Continued

LOCUM TENENS; days, weeks; moderate; reliable; engagements booked forward.—T. C. Beach, M.P.S., Windsor Edge, Inchbrook, Stroud, Glos. Telegrams: Beach, Nailsworth.

BRANCH Manager or Locum; qualified; 37; store experience and West-end; Extractor, Prescriber, and knowledge Photography; excellent references.—Statim, 140, Kennington Park Rd.

MANAGER of country business; long experience in Prescribing, Dispensing, and general Retail; on own account thirty years. — Address, Day, Chemist, Hunmanby, East Yorkshire.

DISPENSER and Book-keeper to Surgeon, Chemist, Dispensary or Institution; mornings, evenings; part time or otherwise; qualified; experienced; excellent references. —Salicine, 8, Serle St., W.C.

EMERGENCY.—Locum Tenens, for mixed business; qualified; abstainer; Extractor; Prescriber; excellent testimonials; disengaged; usual terms; reasonable.—Brewerton, 133, Liverpool Rd., Birkdale, Southport.

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows:—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

FIRST-CLASS Dispensing and light Retail (by interview); price £850.—Apply, Beta, 8, Serle St., W.C.

ON easy terms; good opportunity for starting business; small deposit only required; complete, stock, fixtures, and utensils.—For particulars address, H., 12, Waterloo Rd., Manchester.

£300 ALL AT. Unopposed light Retail, Dispensing and Prescribing Business; old established; South coast; well fitted; owner retiring; great scope for increase.—Hydrastis, Pharm. Journal Office, 8, Serle St., W.C.

KENT.—In best central situation of county town, a small profitable Retail and Prescribing Business. Old-established, with new front; rare chance for Store Chemist; price £300.—Apply, Cura, Pharm. Journal Office, 8, Serle St., W.C.

PRESCRIBING and General Business and premises, consisting of shop, large room and cellar, with dwelling-house (let off); North-east district; an excellent position for Prescriber and Extractor; large profits; business been neglected; satisfactory reason for disposal. — Apply, Medicus, Pharm. Journal Office, 8, Serle St., London, W.C.

LANCASHIRE Manufacturing and Seaport Town.—Corner Shop, on main road and important thoroughfare of thickly-populated working-class district; rent low; well fitted and well stocked; both gas and electric light; good house, with separate entrance, recently re-decorated throughout; at present under management, and only requires personal attention to make a good thing; valuation about £180. —Taviuni, c/o Evans, Sons & Co., Liverpool.

Business Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

WANTED, good-class Business in London suburb or town near London; returns about £1,000; good residence and moderate rent essential. — Full particulars to Kash, c/o Messrs. Davy Hill & Co., 64, Park St., Southwark, London.

CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., Chemists' Transfer Agents, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

The Business conducted by Messrs. Orridge & Co. has been known as a Transfer Agency in the advertising columns of the Pharmaceutical Journal since the year 1846, and is well known to all the leading firms in the Trade.

VENDORS have the advantage of Messrs. O. & Co.'s direct attention and advice as to value without any additional fees.

PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

Terms for Valuation on application.

THOMAS TOMLINSON & SON

Chemists' Transfer Agents and Valuers,

9, NEW CANNON STREET, MANCHESTER.

VENDORS saved time and trouble by consulting before offering for sale. PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address,* "Tomtom."

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PHARMACEUTICAL JOURNAL

Is supplied from the Office, 8, Serle St., London, W.C., post free to any part of the United Kingdom, Colonies, and Abroad, on prepayment of 20s. for twelve months.

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CORONATION OF H.M. THE KING.

A BEAUTIFUL Memento and Advertisement—Button Medallions, real works of art in miniature, Portraits in colours of King and Queen together, also King alone, 1¼ in. diameter; 1,000, 90s., with advertisement. King or Queen separately, ⅞ in. diameter, 55s. 1,000, with advertisement (larger quantities at lower rates). An article suitable for any first-class tradesman to distribute. A large range of advertising media.—Write Julius Kahn, 131-132, Bunhill Row, London, E.C.

PHARMACEUTICAL SOCIETY.

OFFICIAL NOTICES.

ANNUAL SUBSCRIPTIONS.

All Annual Subscriptions are now due.

Subscription payable by Members	One Guinea
Subscription payable by Student-Associates ..	Half-a-Guinea
Life Subscription (Members)	Ten Guineas

Subscriptions should be remitted by Post-Office Order, Postal Orders, or Cheque, direct to the Secretary, 17, Bloomsbury Square, or may be paid at the Offices in London or in Edinburgh.

Cheques should be drawn in favour of RICHARD BREMRIDGE, or Bearer, and crossed "London and Westminster Bank," and Post Office Orders and Postal Orders should be made payable at the Western Central District Post Office.

EVENING MEETING.

36, York Place, Edinburgh.

An Evening Meeting of the Society will be held in the Society's House, 36, York Place, Edinburgh, on Wednesday next, March 19, at 8.30,

Mr. Peter Boa in the Chair.

Proceedings.

I. Laboratory Notes on:—(*a*) Collodion of Belladona, B.P.C.; (*b*) Extract and Tincture of Indian Hemp; (*c*) Tincture and Syrup of Tolu. By George F. Merson, F.C.S.

II. Is Tincture of Digitalis a Stable Preparation? By J. Gordon Sharp, M.D.

III. Note on Extract of Liquorice. By D. B. Dott, F.I.C., F.R.S.E.

ELECTION OF COUNCIL AND AUDITORS.

Extract from Bye-Laws.

Section V., Clause 3.—Any Member qualified to vote desirous of nominating any other Member for election as a Member of the Council or as an Auditor, shall on or before the 18th day of March in every year give a notice signed by him to the Secretary, with the name and address of the nominee. The Secretary shall on or before the 20th day of March then instant address and send by post to each nominee a notice of his having been nominated, and inquiring whether he will accept office if elected, and in default of a written reply from such nominee being received on or before the 31st day of March then instant declaring his readiness to accept office if elected, such nominee shall not be deemed eligible or willing to be elected.

CALENDAR AND REGISTER.

The new editions of the Calendar and the Register are now ready. Application for copies should be made to the Secretary, 17, Bloomsbury Square, W.C. The price of the Calendar is 2s., and of the Register 5s., exclusive of postage, but in the case of copies purchased by subscribers to the Society postage is not charged.

APPLICATIONS FOR TRADE MARKS.

*From the Trade Marks Journal, March 12, 1902.**

Class 1.

Preservite.—243,692. A Fluid or Liquid to Prevent Metals from Oxidising or Rusting. Wm Morton Walker, 16, Sidney Street, City Road, London, E.C.; Varnish and Enamel Manufacturer.—January 25, 1902.

Rolda.—243,991. Sensitive Photographic Films. Geo. Houghton and Son, 88 and 89, High Holborn, London, W.C.; Photographic Dealers.—February 5, 1902.

Class 3.

Device, including the letters "O.P." (off prompt) and the words "The Instantaneous Cure for All Nerve Pains."—247,827. A Medicinal Powder for Human Use. The Renson Manufacturing Co., 11, Woodbridge Street, Clerkenwell, London; Manufacturers of High-class Toilet Preparations and Perfumes.—December 20, 1901. The essential particular of the trade mark is the device, and the applicants disclaim any right to the exclusive use of the added matter.

Seapongs.—243,894. Patent Medicines and Embrocations for Human Use. George Pearson, 17, Angel Row, Market Place, Nottingham; Grocer and Provision Merchant.—February 1, 1902.

Class 48.

Tressetta.—242,461. A Toilet Preparation for the Hair. Parke's Drug Stores, Limited, 173, High Street, Camden Town, London, N.W.; Dealers in all Chemists' Articles.—December 4, 1901. No claim is made to the exclusive use of the word "Tress."

Sohoparlene.—243,309. A special Soap-powder for the Toilet, not included in other classes. Wm. Henry Darman, 159, Shrewsbury Road, Forest Gate, Essex; Manufacturer of a Toilet Soap.—January 14, 1902. No claim is made to the exclusive use of the word "Soho."

Kymoline.—243,854. Toilet Articles included in Class 48. S. F. Goss, Limited, 460, Oxford Street, London, W.; Toilet Specialists.—January 31, 1902.

SCHOOL AND COLLEGE NEWS.

Imperial College of Chemistry.—On Friday, March 7, the students of this College were conducted through the works of the South Metropolitan Gas Company, and there initiated into the technicalities of gas-making.

School of Pharmacy. The annual "Smoker" of the Pharmaceutical Football Club will be held on Saturday, March 22, at the "Bush" Hotel, Shepherd's Bush. It will commence at 7 p.m., and it is hoped that many past and present students will manage to find their way there. Mr. B. Nelson has kindly consented to get up a team of old boys to play the Square XI. on the afternoon preceding the concert.

West of Scotland College of Pharmacy.—The third annual dinner of the students of the West of Scotland College of Pharmacy was held on March 10 at the Alexandra Hotel, when about sixty gentlemen sat down to the table, the chair being occupied by Mr. Thos. S. Barrie, the Principal. The Chairman was supported by Mr. Peter Boa (Chairman of the North British Branch of the Pharmaceutical Society), Mr. J. P. Gilmour (of the Chemists' Assistants' Association), Mr. John Walker, etc.—Mr. Walker, in proposing the toast of "The Pharmaceutical Society," made reference to its origin and continued progress, and especially to the relation of the Society to the sale of poisons in large quantity.—Mr. Boa was strongly of opinion that the retail of poisons, in large or small quantity, should be confined to duly qualified chemists, as they were peculiarly fitted to handle these things, to store them carefully, and, by virtue of their superior education, ensure their proper application.—Mr. Barrie, in responding to the toast of "The College, referred to the new preliminary examination, and said that, as a result of some correspondence between himself and the proper persons, the chief Scottish Educational authority was considering the advisability of modifying the examination fees to students of pharmacy. He then proceeded to distribute the prizes which had been awarded to the successful students for excellence in home work.—During the course of a most enjoyable evening a number of songs were rendered by Messrs. Dow and Flockhart, Mr. Gilmour also giving one of his inimitable recitations.

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* Any objection to the registration of an application for the registration of a trade mark must be stated on Trade Mark Form J, obtainable at any money order office, price one shilling. Such objection must be lodged with the Comptroller within a month of the date given above.

SOCIETY AND ASSOCIATION NEWS.

Chemists' Assistants' Association.—The President of the Pharmaceutical Society (Mr. G. T. W. Newsholme), Dr. A. P. Luff, and Messrs. W. L. Howie and W. F. Gulliver (President, Western C.A.) have accepted invitations to be present at the annual dinner of this Association on the 20th inst.

Manchester Pharmaceutical Association.—A meeting of this Association was announced to be held at the Victoria Hotel, on Wednesday evening, to hear a paper on testing sights, by the Secretary, but after waiting twenty minutes, and nobody putting in an appearance, our reporter concluded that the meeting must have been postponed.

Edinburgh Chemists', Assistants', and Apprentices' Association.—The annual dinner of this Association will be held in the Imperial Hotel, Edinburgh, on Friday, March 21. at nine p.m., Mr. J. G. Sclater, President, in the chair. Tickets—4s. each—may be had from the Secretary, Mr. P. K. Brown, 105, Broughton Street, and members of Committee.

Pharmaceutical Society of Ireland.—All applications for the undermentioned April examinations must be lodged with the Registrar by eleven o'clock a.m. on the following dates:—Tuesday, the 18th inst., for the Preliminary Examination; Tuesday, the 25th inst., for the Registered Druggist Examination; Wednesday, the 26th inst., for the Pharmaceutical License Examination; Tuesday, the 1st prox., for the Pharmaceutical Assistant Examination.

Edinburgh Chemists' Golf Club.—The annual general meeting was held in the Pharmaceutical Society's House, 36, York Place, Edinburgh, on Tuesday, March 4, Mr. W. Charles Baker, captain, in the chair.—The Hon. Secretary (Mr. James Stott) read the annual report, which indicated that the past year had been the must successful in the history of the club. They had a record membership, record scoring, and record attendances at the various competitions.—The Hon. Treasurer submitted the financial statement, showing a balance in hand of £5 17s. 6d., which exceeded any previous balance. Some slight alterations were made on the bye-laws regulating the hole-and-hole competitions. The following were elected office-bearers for the ensuing year:—Honorary President, J. Rutherford Hill; Captain, Claude F. Henry; Honorary Secretary, James Stott, 10, Royal Crescent; Assistant Secretary, J. J. Robb; Honorary Treasurer, W. B. Cowie; and as members of Committee Messrs. H. D. Alexander, W. C. Baker, A. J. Dey, J. Finlay, J. C. Laird, W. Lyon, and G. Robertson. It was remitted to the Committee to make the fixtures for next season. —On the motion of Mr. Henry, a cordial vote of thanks was awarded to the retiring office-bearers.

COMPANY INTELLIGENCE.

T. G. Hughes, Limited.—This company was registered on March 7, with a capital of £1,000 in £1 shares, to adopt an agreement with T. G. Hughes for the acquisition of the business of a chemist, druggist, drysalter, and wine and spirit merchant as carried on at Bradley Green, in the parish of Biddulph, Staffordshire. No initial public issue. Sole director, T. G. Hughes. Qualification, £1. No remuneration specified. Registered office: High Street, Bradley Green, Biddulph, Staffordshire.

British and Colonial Druggist, Limited.—This company was registered on February 27 with a capital of £8,000, in £1 shares, to adopt an agreement made with Straker Brothers, Limited, to acquire the copyright and goodwill of the newspaper known as the *British and Colonial Druggist*, and any publications connected therewith; also the goodwill and business of the Chemists' Exhibition, held annually in London or elsewhere, and generally as newspaper proprietors, etc. There is no initial public issue.

Bayard, Fils et Bayard, Limited.—This company was registered on March 7, with a capital of £25,000 in 10,270 £1 preference shares, 1,300 £10 ordinary shares, and 173 deferred shares of £10 each, to acquire the business of soap and perfumery manufacturers as carried on by the Standard Soap and Perfumery Company, Limited, at Scrubbs Lane, Willesden Junction, and to acquire the business of Bayard, Sons and Bayard, Limited, soap and perfumery manufacturers, wholesale and retail chemists, druggists, etc., importers and manufacturers of and dealers in all kinds of pharmaceutical, medicinal, chemical, industrial, and other preparations. No initial public issue. The directors are R. G. Orr, F. C. Van Dwyer, and W. Hall. Qualification, 50 ordinary shares. Remuneration, £2 2s. for each board attendance.

Southall Bros. and Barclay, Limited.—The annual report of the directors of this company, which will be presented at the ordinary general meeting of shareholders to be held on March 18, states that the profits for the year 1901 were in excess of any previous year, and that, therefore, it is intended to create an inner reserve fund after placing £1,000 to the published reserve fund, and carrying forward to next year's account the sum of £1,394 8s. 11d. The accounts show that after providing for bad debts, depreciation, directors' remuneration, and the creation of an inner reserve, there is a balance of profit for the year of £11,604 11s. 6d. To that sum must be added the sum of £1,346 8s. 11d., which was carried forward last year, making a total of £12,951 0s. 5d. Out of that has been paid interest on loans £756 11s. 6d., and an interim dividend on preference shares of £1,750, leaving a balance of £10,444 8s. 11d., which the directors recommend should be appropriated as follows: second half-year's dividend on preference shares at 5 per cent. per annum, £1,750; year's dividend on ordinary shares at 10 per cent. per annum, £6,300; to be carried to reserve, £1,000; balance to be carried forward to next account, £1,394 8s. 11d. The retiring director is Mr. Thomas Barclay, junr., who is eligible, and offers himself for re-election. Mr. Alfred Southall retired from the position of a managing director at the close of 1901, but he still remains a director of the company. The auditors, Messrs. Howard Smith, Slocombe and Company, retire, but are eligible for re-election.

TRADE NOTES AND NOVELTIES.

Dry Closing Cachet Machine.—Messrs. H. P. Thompson and Co., of Aldersgate Street, have submitted for inspection an apparatus which effectually closes their new dry closing cachets. The edges of those cachets do not require to be moistened in order to envelop the contents securely and, in addition to the saving of trouble, there is no risk of discoloration at the edges when dark powders are used. Three sizes of the cachets are supplied, corresponding to the three standard sizes, 0½, 1½, and 2, now in general use. They can be closed by hand, and when, as frequently happens, a single headache powder or other powder is asked for, and dispensed over the counter, no machine is required; but when quantities are made the machine will be found an advantage, if not a necessity. It is without complications and extremely simple in operation, consisting of three perforated plates which fold over each other. A small funnel to facilitate placing the powder in the cachets, and a cone-shaped appliance for ejecting them when filled, complete the outfit.

PUBLICATIONS RECEIVED.

Pharmaceutical Register of Victoria for 1902. Pp. 16. Melbourne: Printed and Published under the Direction of the Pharmacy Board of Victoria by Robert S. Brain, Government Printer. From the Registrar.

The Idler, March, 1902. Pp. 572. Price 6d. London: Dawbarn and Ward, 6, Farringdon Avenue, E.C. From the Publishers.

The Medical Annual: A Year-Book of Treatment and Practitioner's Index. 1902. Pp. lxxxiv. + 774. Price 7s. 6d. net. Bristol: J. Wright and Co. 1902. From the Publishers.

MARKET REPORT.

London, Thursday, March 13, 1902.

Business in Drugs and Chemicals has been, if anything, rather more active during past few days. Quinine has rather hung fire as far as the speculative market is concerned, advice as to what the Bark shipments from Java have been for first half of the month being now awaited. Codliver Oil is firm for early delivery, but the high prices asked make buyers pause. Refined Camphor is firm at late advance, although there has been a set-back in price of the crude article. Glycerin is firm. Acid Carbolic steady. Acid Citric, Acid Tartaric, and Cream of Tartar quiet. Acetanilide, Phenacetin, and Sulphonal weak. Cocaine fairly steady. Bromides firm. Iodides unchanged. Quicksilver and Mercurials in good demand. Opium and Morphine weak. Codeine firm. We give below quotations actually ruling for some articles of chief interest.

ACETANILIDE—Very dull and weak at 8½d. to 10d. per lb., according to quantity and make.

ACID BORACIC—Without change at 22s. and 24s. per cwt. respectively for crystals and powder.

ACID CARBOLIC.—There has been rather more doing in this article of late, and price is very steady at 6½d. to 7d. per lb., according to quantity and make for 34-35° ice crystal in bulk packing, 7¼d. to 7½d. per lb. for the 39-40° ditto, and 8½d. to 9d. per lb. for the B.P. quality 39-40° in detached crystals. Crude, 60° F., 1s. 11½d. per gallon; ditto 75° F., 2s. 6d. Liquid, 95-98 per cent. of pale straw colour, 1s. to 1s. 2d. per gallon, according to quantity and make; ditto 25-30 per cent. of dark colour, 8d. to 10d. per gallon in 40 gallon casks.

ACID CITRIC—Quiet at 1s. 0½d. to 1s. 1d. per lb., according to quantity and make, for crystals in 5-cwt. casks.

ACID TARTARIC—Unchanged at 11½d. per lb. for English and 10½d. per lb. for foreign.

BLEACHING POWDER (CHLORIDE OF LIME).—English £7 per ton.

BORAX—Is still quoted 13s. per cwt. for crystals, and 14s. per cwt. for powder.

BROMIDES Are firm and in good demand at unchanged prices, on basis of 1s. 11½d. per lb. for Potassii Bromid.

CAMPHOR.—Makers are firm at the lately advanced price, and now quote 2s. 3½d. per lb. for Bells and Flowers. Market for Crude is flat at about 2s. 6d. per cwt. reduction, there being sellers, but no buyers, at 157s. 6d. to 160s. per cwt., c.i.f., for Japan Crude for March-April shipment.

CINCHONA BARK.—At Auction in London, on Tuesday, there was good competition, and greater part of the offerings sold well at an advance of ⅛d. per unit, average price realised being 1⅝d. per unit against 1½d. at last London sale, and 1$\frac{7}{16}$d. per unit at last Amsterdam sale.

COAL TAR DISTILLATION PRODUCTS.—Toluol, 9½d. per gallon; ditto pure, 6d. per lb. Benzole, 50 per cent., 8d. per gallon; 90 per cent., 9d. Creosote, 1⅝d. to 3d per gallon according to quantity, packing, etc. Crude Naphtha, 30 per cent. at 120° C. 4d. per gallon. Solvent Naphtha, 95 per cent. at 160° C., 1s. 4d. per gallon. Anthracene: A, 2¼d. per unit. Pitch, 40s. per ton, f.o.b. Tar, refined and or crude, 12s. 6d. per barrel, 2½d. per gallon.

COCAINE—Is steady at 17s. 9d to 18s. 3d. per oz. for the Hydrochlorate in 25-oz. tins and 2s. 9d. per oz. more for the pure Alkaloid.

CODEINE—Continues very firm at 12s. 6d. per oz. for the pure alkaloid, 11s. 6d. per oz. for the Muriate and Sulphate, and 9s. 9d. per oz. for the Phosphate Salts.

COD LIVER OIL.—Market is in a somewhat anomalous position. For early shipment the best brands are held for high prices, 85s. to 95s. per barrel, which causes buyers to hold off, and this fact on the other hand causes a scarcity in the market, which tends towards high prices for immediate requirements. We think our readers would be wise to buy only from hand to mouth just for the present.

COPPER SULPHATE—Is quoted at £19 to £21 per ton, according to quantity and brand for spot delivery.

GLYCERIN—Is firm at about £40 to £42 per ton for Candle Crude, and at £37 to £38 per ton for Crude from Soap Lees. The refined article also continues firm at, however, unchanged prices, viz., 63s. 6d. to 66s. per cwt., according to quantity and make for best white, odourless, double distilled, chemically pure 1,260 SG quality in tins and cases (2 or 4 × 56 lb. tins in a case). For export it is possible to buy at even below these prices.

IODIDES—Are unchanged on basis of 8s. 9d. per lb. for Potassii Iodid.

LITHIA SALTS.—The German makers still quote 6s. 3d. per lb. for the carbonate and 4s. 9d. per lb. for the citrate crystals in 2-cwt. lots.

MENTHOL.—Kobayashi crystals are quoted 13s. 9d. to 14s. per lb., according to quantity.

MERCURIALS—Are without change at 3s. 0½d. per lb. for Calomel, 2s. 8½d. per lb. for Corrosive Sublimate, 3s. 4½d. per lb. for Red Precipitate, and 3s. 7d. per lb. for White Precipitate.

MORPHINE—Continues very quiet, nominally at 4s. 5d. to 4s. 7d. per oz. for the Hydrochlorate powder, and 2d. per oz. more for crystals; for quantity it would, however, be possible to buy at below these figures.

OILS (FIXED) AND SPIRITS.—Linseed Oil quiet. London spot pipes £30 15s. to £31, barrels £31, month £30 12s. 6d, April £30 10s. to £30 12s. 6d., May-August £30 2s. 6d. to £30 5s., September-December £29. Hull naked spot £29 7s. 6d., March-April £29 5s., May-August £29 5s. Rape Oil quiet. Ordinary Brown on the spot barrels £26 10s., March-April £26 10s. English Refined spot £27 15s. Ravison naked spot £24 10s., March-April £24 10s. Cotton Oil easier. London Crude spot £22 10s., March-April £22 15s., May-August £23. Refined spot £23 15s. to £24 15s. Hull naked Refined spot £22 12s. 6d., March-April £22 15s., May-August £23. Crude spot £21 10s., March-April £21 12s. 6d., May-August £21 17s. 6d. Olive Oil: Mogador £33 to £34, Spanish £34 to £36 (as to quality), Levant £33 to £34. Cocoanut Oil flat and easier forward, Ceylon spot £33, March-May £29 10s. c.i.f., April-June £29 5s. c.i.f., May-July £29 c.i.f. Cochin spot £37, February-April £33 c.i.f., March-May £32 c.i.f. Palm Oil: Lagos on the spot £27. Turpentine dull and easier. American spot 30s. 7½d. to 30s. 9d., April 30s. 10½d., May-August 31s., September-December 31s. 1½d., January-April 32s. 3d. Rosin: Common strained spot 4s. 9d. ex wharf, March-May sailer 4s. 4d. ex ship terms. Petroleum Oil steady. Russian spot quoted 6⅜d. to 6½d. American spot 6⅞d. to 7d., Water White 7¾d. to 8d. Refined Roumanian on spot 6⅛d. to 6¼d.

OPIUM—Is quiet, with but little business passing. Future of the article depends much on prospects of new crop, about which reports are somewhat conflicting. Should same prove anything more than quite unfavourable, a decline in value of the article would appear to be inevitable.

PHENACETIN—Is quiet nominally at 4s. 3d. to 4s. 9d. per lb. for both crystals and powder, with outside sellers at something below these prices

QUININE.—Market is quiet. Makers are firm at 1s. 2d. per oz. for the Sulphate for 1,000 oz. lots in 100 oz. tins, while in the speculative market there are buyers at 1s. 1⅝d. for spot, 1s. 2d. per oz. for June, and 1s 2¼d. per oz. for August delivery. The favourable results of Bark Sale in Amsterdam, on 26th ult., followed up by the advance established in price of Java made Quinine at late sale in Batavia, and followed again by last Tuesday's Bark Sale in London, has tended to give the market for Quinine a decidedly firmer tone. Much, however, depends now upon the Bark shipments from Java.

SALOL.—Makers still quote 2s. 3d. per lb., with a trifling reduction for larger contracts.

SPICES.—Cloves: 12 cases Penang sold, bold picked, but damp, at 6½d.; 253 bales Zanzibar bought in. Ginger: Of 354 packages Cochin 90 bags sold, washed rough small and medium at 36s. 6d. to 38s.; cut kinds bought in at 80s. for bold and medium fair scraped, and medium ditto at 65s. Of Jamaica only 29 packages sold, common to fair Rhatoon at 36s. to 39s. Black Pepper: 44 bags Aleppy bought in at 6d. for fair. White Pepper: 67 bags fair Singapore bought in at 10d. Chillies: 85 bags good bright Japan bought in at 40s. Capsicums: 39 bales Bombay bought in, long red and yellow on stalk at 15s. Cinnamon Chips: 100 bags Ceylon bought in at 3d. Cassia Lignea: 100 cases selected bought in at 60s., and 100 bales broken at 50s. Pimento: 62 bags sold at 2⅞d. to 3d.

SULPHONAL—Is still practically a dead letter. Demand for consumption appears to be slow; while dealers are no doubt quite full up with purchases made some time since. Bayer's make can still be bought at 5s. per lb. for crystals or powder.

THYMOL—Weak at 7s. 9d. to 8s. per lb.

DISSOLVED . . HAEMOGLOBIN CAPSULOIDS

THE LANCET of August 11th, 1899, says:—
"The administration of Iron in this form is satisfactory. To not a few the appearance of Haemoglobin is repulsive. Capsuloids meet this objection, and evident care is devoted to their preparation."

CAPSULOIDS are so largely prescribed by Physicians

BECAUSE—They contain only pure dissolved Haemoglobin scientifically extracted from carefully selected fresh blood.

BECAUSE—They never produce the slightest nausea, like most Haemoglobin mixtures and powders, are pleasing to the eye, and easily swallowed even by young children, and furnish exact doses.

BECAUSE—Anæmia and chlorosis, and all similar conditions of blood, are rapidly cured by taking them.

Capsuloids are sold in boxes for dispensing only.

THE CAPSULOID COMPANY, 31, SNOW HILL, LONDON.

JAMES TOWNSEND & SON

Beg to announce that they are supplying their

PINE TREE TOILET PAPER
in
ROLLS
as well as
SERRATED PACKETS.

Particulars on Application.

EXETER: Little Queen Street.
LONDON: 2 & 3, Stonecutter St., E.C.

BUY FROM THE DIRECT IMPORTERS

SPONGES
FOR CHEMISTS' TRADE.

I. & M. COHEN

Sponge Merchants, Importers and Exporters,
Contractors to H.M. Government,
35 & 54, HOUNDSDITCH, & 66, ST. MARY AXE LONDON, E.C.
Every Description always on hand.

BIRTH.

Ransom. March 11, at Golant House, Sheringham, the wife of W. T. Ransom, M.P.S., of a daughter.

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

Thomas Edward Metcalffe and Herbert Smith, wholesale druggists, Corporation Street, Halifax. Debts will be received and paid by T. E. Metcalfe.

Lewis Ansell Lewis, Arthur John Noyes, and Frederick Charles Monnickendam, trading as Durant and Co., wholesale perfumers and manufacturers of toilet preparations, 21, Rosebery Avenue, London, E.C., and 19, Mount Pleasant, Clerkenwell, London.

Henry Clark Wilson and William Thomas Meagher, medical practitioners, 51, West Ferry Road, Millwall. Debts will be received and paid by H. C. Wilson.

DIARY OF THE WEEK.

Monday, March 17.

Edinburgh Pharmacy Athletic Club, Pharmaceutical Society's House 36, York Place, at 9.15 p.m.—Annual General Meeting.

Tuesday, March 18.

Royal Institution, Albemarle Street, Piccadilly, W., at 3 p.m.—"Recent Researches on Protective Resemblance, Warning Colours and Mimicry in Insects," by Prof. E. B. Poulton.

Wednesday, March 19.

Chemical Society, Burlington House, Piccadilly, W., at 5.30 p.m.—"The Absorption Spectra of Metallic Nitrates" (Part I.), by W. H. Hartley; "A Method of Determining the Ratio of Distribution of a Base between two Acids," by H. M. Dawson and F. E. Grant; "On the Molecular Complexity of Acetic Acid in Chloroform Solution," by H. M. Dawson; "On the Existence of Polyiodides in Nitrobenzene Solution," by H. M. Dawson and R. Gawler; "Nitrogen Chlorides containing the Propionyl Groups," by F. D. Chattaway; "Derivatives of *a*-aminocamphoroxime," by A. Lapworth and A. W. Harvey; "Preparation of Sulphamide from Ammonium Amidosulphite," by E. Divers and M. Ogawa; and "Hypoiodous Acid," by R. L. Taylor.

Forfarshire and District Chemists' Association, Mather's Hotel, Dundee, at 4 p.m.—"University Education for Pharmacists," by J. F. Tocher.

Pharmaceutical Society of Great Britain, 36, York Place, Edinburgh, at 8.30 p.m.—Evening Meeting. "Laboratory Notes on;—(*a*) Collodion of Belladonna, B.P.C.; (*b*) Extract and Tincture of Indian Hemp; (*c*) Tincture and Syrup of Tolu," by George F. Merson; "Is Tincture of Digitalis a Stable Preparation?" by Dr. J. Gordon Sharp; "Note on Extract of Liquorice," by D. B. Dott. Additions to Library and Museum.

Royal Microscopical Society, 20, Hanover Square, W., at 7.30 p.m.—An Exhibition of Foraminifera, by A. Earland.

Western Chemists' Association, Westbourne Restaurant, 1, Craven Road, W., at 9 p.m.—"The Stamp Act and its Difficulties," by Leo Atkinson.

Young Chemists' Association, Working Men's Club, Gallowgate, Newcastle, at 8 p.m.—Impromptu Discussion.

Thursday, March 20.

Barnsley Chemists' Association, Royal Hotel.—Ordinary Meeting.

Chemists' Assistants' Association, Royal Venetian Chamber, Holborn Restaurant, at 8 p.m.—Annual Dinner.

Glasgow and West of Scotland Pharmaceutical Association, at 11 a.m.—"The Scotch Universities and Pharmaceutical Education," by J. F. Tocher.

Linnean Society of London, Burlington House, Piccadilly, W., at 8 p.m.—"Electric Response in Ordinary Plants under Mechanical Stimulus," by Professor J. C. Bose; "The Fruit of *Melocanna bambusoides*, Trin., an exalbuminous grass," by Dr. A. Stapf; "Malacostraca from the Red Sea, collected by Dr. H. A. Forbes," by Alfred A. Walker and Andrew Scott.

Northampton Chemists' Association.—Annual Dinner.

Friday, March 21.

Edinburgh Chemists', Assistants', and Apprentices' Association, Imperial Hotel, at 9 p.m.—Annual Dinner.

Royal Institution, Albemarle Street, Piccadilly, W., at 9 p.m.—"Recent Developments in Colouring Matters," by Geheimrath Professor Otto N. Witt.

Saturday, March 22.

Royal Institution, Albemarle Street, Piccadilly, W., at 3 p.m.—"Some Electrical Developments," by Lord Rayleigh.

Pharmaceutical F.C. *v.* Old Boys.

Metropolitan College of Pharmacy F.C. *v.* War Office Sports Club.

Notices to Correspondents.

All Communications for the 'Pharmaceutical Journal' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street Lincoln's Inn, London.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Adams, Adamson, Alcock, Barnes, Barrie, Black, Bott, Brown, Buddicom, Cory, Cruickshank, Cummings, Dallinger, Davis, Dolbear, Dowsett. Dudderidge, Dunlop, Ferrall, Forret, Goldby, Harrington, Hebb, Holt, King, Latreille, Lord, Melling, Merson, Morgan, Noble, Nunn, Perry, Philp, Pickering, Ransom, Ridley, Rowntree, Smith, Tavener, Trunchion, Usher, Wells, White, Wilcock, Woolcock.

Pharmaceutical Journal

SATURDAY, MARCH 22, 1902.

Advertisements for insertion in the March 29 issue of this Inset must reach the Publishing Office, 8, Serle St., London, W.C., by 4 p.m. Wednesday the 26th inst.

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Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Tetlow's Swandown Powder.—Quantity and lowest price.—Eastman, Forest Lane, Stratford, E.

Platinum Utensils and scraps for cash.—P. Rowsell, 9, Derwent Grove, Dulwich.

Fernie's "Herbal Simples," second edition. Particulars and price to A. R., Pharm. Journal Office, 8, Serle St., W.C.

Wanted.—Odd numbers and volumes Pharm. Jl., Chem. Soc. Jl., The Analyst, Chem. News, Chem. Gazette, Amer. Chem. Jl., Amer. Chem. Soc. Jl., and others; also part and complete sets.—Address offers, "Drachma," Pharm. Journal Office, 8, Serle St., London, W.C.

OFFERED.

100 G. B. Kent Preference Shares.—M., 30, Tranquil Vale, Blackheath, S.E.

Dental-chair (Ash's); good condition; 5 guineas.—Dentalis, 7, Osborne Terrace, Landport.

Photographic Mounts. 2,500 cabinets, 25s.; 2,000 C.D.V.'s, 7s. 6d. to clear.—Edward Peck, East Dereham.

200 Idris A Ordinary, paying 10 per cent., 26/-; 150 B, 7 per cent., Preference 23/9.—O., 39, Quentin Rd., Lee, S.E.

Offered.—10 £1 Westminster College Shares; dividend 6 per cent.—Decem. Pharm. Journal Office, 8, Serle Street, London, W.C.

Magic Lantern, 3½ lens; 28 framed slides, and odd; copper still for 5 by 4 or half-plate camera, tripod.—Dalkeith, Cleveland Road, Torquay.

Stephenson and Churchill's Medical Botany with 185 beautifully coloured plates; 4 vols. 8vo; gilt top; perfect unspotted copy; price 35s.—Homo, 8, Serle St., W.C.

OFFERED—*Continued*

Ten Vols. Pharmaceutical Journal 1869-1878 complete; leather back, marble side; splendid condition, offers.—Young, News Office, Chard.

For Sale.—26-inch Eddystone Pneumatic Bicycle; flat bar; 63 gear; as good as new; light roadster; rubber pedals; price, £6.—Salol, 8, Serle St., W.C.

4 3-gal. Show-bottles, round, 5/- each; 2 2-gal. pear-shaped carboys, 4/- each; 6 1-gal. do. do. 3/- each, all with cut stoppers. French Scales, 10 lbs., 15/-; Avery's brass scales, 14-in. beam, 21/-. Mahogany pill machine, 24 pill 5 gr., 10/-.—Whatmough, Stationer, Tenbury, Worcestershire.

Fish Knives and Forks.—Six pairs very handsome, best silver plated fish knives and forks, with beautiful sterling hall-marked silver handles, by Mappin, in elegant case, only £2; worth £4. Also pair of silver plated fish servers to match, only 18s. 6d.; worth 38s. Both new. Presents. Approval before payment willingly.—Mr. Ralph, Cambridge House, Lakenheath, Suffolk.

24 1s. Mirilla gold-paint, 4s. doz.; 78 1s. 1½d. Hoffmann headache-powders, 8s. doz.; 2 2s. 3d. Moller's cod-liver oil, 2s. 3d.; 1 4s. 6d. Churchill's hypophosphites, 2s. 4d.; 6 1s. 1½d. Laxol, 3s. 9d.; 3 1s. 1½d. Hogg's horehound honey 2s.; 1 2s. 6d. Wakelee's cameline, 1s. 8d.; 2 1s. 9d. Gell's Dalby's carminative, 2s. 1d.; 1 box (3 doz. 3d.) mimosa cachous, 3s.; 12 1s. Seabury's improved corn-plasters, 5s. Templar Malins, Chemist, 107, Woodville Road, Cardiff.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

A Copy of this Inset is inserted in every *Pharmaceutical Journal* issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at the Publishing Office, 8, Serle St., London, W.C., and at more than two hundred addresses in the United Kingdom; a list of these addresses was published March 8.

Assistants Wanted

Prepaid Advertisements under this heading are charged as follows :—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

A Copy of this Inset will be forwarded gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at more than two hundred addresses in the United Kingdom.

WANTED, a good qualified Assistant. — D. Marchant, Chemist, Eastbourne.

QUALIFIED Assistant for a Dispensing and light Retail. Must be a good Dispenser.—Apply, Maitland, 8, Torrington Place, W.C.

LONDON, S.W.—Good Junior wanted, accustomed to high-class cash business; outdoors.—Owain Evans, 18, Wilton Rd., Victoria, S.W.

ASSISTANT, qualified, about 25; indoor; for good Dispensing and Retail business.—Apply, giving references, &c., to Shaw, Harborne, Birmingham.

JUNIOR or Improver, one used to quick cash store trading preferred.—State experience, age, height, salary required (outdoor), to Wand, Haymarket, Leicester.

MESSRS. TIMOTHY WHITE COMPANY, Chemists, Portsmouth, have a few vacancies in various parts of the South of England for junior Assistants.

PART TIME Assistant required, with good knowledge of dispensing; would suit minor student.—Apply, stating usual particulars, to Routley & Co., Beckenham.

AN Assistant of active business habits; weekly half-day holiday.—Apply with full particulars and salary required to W. Sharman, 186, Mare St., Hackney, N.E.

COVENTRY. — Junior Assistant wanted (indoors), for Dispensing and Retail business.—Apply, R. Hiscock Chemist, Coventry.

LONDON, N.W.—Competent Junior wanted for Dispensing business.—P. Davidson, Pharmaceutical Chemist, 342, High Rd., Brondesbury, N.W.

JUNIOR Assistant. — Messrs. J. and H. Mathews, 68, Queen's Gardens, Hyde Park, W., require a Junior Assistant, accustomed to first-class pharmacy; qualified preferred.

BRIGHTON.—Wanted, a qualified Assistant for Dispensing (indoors).—Apply, stating age, height, salary, and full particulars, to Glaisyer & Kemp, 11 and 12, North St., Brighton.

IMPROVER or Junior, reliable Dispenser and of good address. —Enclose photo and state age, height, experience, and salary required (indoors) to Condy U'Ren, Chemist, 55, Cobourg St., Plymouth.

WANTED, an Assistant, 22 to 24 years of age, indoor; accustomed to best class Dispensing business.—Apply, giving full particulars and salary required, to Frost & Cope, Pharmaceutical Chemists, Derby.

GOOD Junior wanted, not under 22, accustomed to high-class Dispensing and Retail; indoors; abstainer preferred. —State experience, salary required, and enclose photo, or apply personally, R. H. Parker, 35, Clifton Rd., Maida Vale, W.

Assistants Wanted—Continued

WOOLWICH. — Energetic Assistant wanted; Junior preferred; Unqualified (outdoor); no Sunday duty; half-day weekly.—Salary and references to Carter, Chemist, Woolwich.

HADFIELD. — Assistant wanted, about 20.—Send usual particulars of experience, salary required, &c., with photo, if convenient, to J. Richardson, Chemist, Hadfield, near Manchester.

CHEMIST in large Provincial City wants (after Easter) an unqualified Assistant, one requiring a permanency preferred.—State full particulars and enclose photo in first letter to Cocaine, Pharm. Journal Office, 8, Serle St., London, W.C.

QUALIFIED Assistant (outdoor) wanted in a good-class Retail and Dispensing business; knowledge of photography preferred; short hours. — State age, height, experience, salary required, &c., to J. C. Shenstone, 13, High St., Colchester.

HENRY JEFFRIES, Guildford, has a vacancy for a smart Junior or Improver for a good class Dispensing and Retail business; some previous knowledge of dispensing essential. —Apply (enclosing photo, if possible), stating age, experience salary, and when disengaged.

LONDON, S.W.—Competent Junior, with some experience in Dispensing, wanted after Easter; not under 22; good-class modern Retail and Dispensing business.—Write or call, Keith Longstaff, The Central Pharmacy, 811, Fulham Road, S.W. (a little beyond Walham Green).

QUALIFIED Assistant required, about 27, of good address and experience, for first class Family and Dispensing business; two kept; salary £80 (indoors).—Apply with full particulars to Energy, c/o Mr. S. W. Ord, Ph.C., 3, Hanover St., Regent St., W.

QUALIFIED Assistant wanted (indoor), must have had good experience and be aged not under 22; several assistants kept; close 7.30.—Apply, giving full particulars and enclosing photo (if possible), to Clay & Abraham, Liverpool.

WANTED, a Capable up-to-date Dispenser, used to light class counter trade. A permanency to a suitable man. The business is worked in departments—Chemist and Druggist, Surgical Instruments and Appliances, Ophthalmic Optics, Amateur Photographics.—Particulars (in detail would narrow the issue) to J. Griffiths Richards, Chemist, Hastings.

CAPE COLONY.—Wanted, qualified Assistant, of good experience and having undeniable references; aged about 23; salary 1st year, £12 per month; 2nd year, £13 per month; 3rd year, £14 per month; sleeping accommodation provided; second-class passage paid out; 3 years' agreement.—Apply, Colony, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

LONDON, W.C.—Required in a few weeks' time, an outdoor qualified Assistant, speaking French fluently; suitable vacancy for an assistant, aged about 25, returning from the Riviera, who has a fair knowledge of international pharmacy.—Address, stating fullest particulars as to experience, height, and salary required, Pharmacist, Pharm. Journal Office, 8, Serle St., W.C.

WOLVERHAMPTON & STAFFORDSHIRE GENERAL HOSPITAL. — Wanted, an Assistant Dispenser; must be fully qualified; salary £75 per annum, with mid-day meal. Applications, with testimonials, to be received by 27th March, 1902.

E. Forster,
House Governor and Secretary.

Wolverhampton, 17th March, 1902.

Assistants Wanted—Continued.

CALCUTTA.—Wanted at once, a qualified ASSISTANT; age about 24 years; must be able to conduct analysis; first-class opening for a competent man. Salary, 1st year, 275 Rs. per month; 2nd year, 300 Rs. per month; 3rd year, 325 Rs. per month, and 4th year, 350 Rs. 4 years' agreement. Second class passage paid both ways.—Apply by letter to CALCUTTA, c/o Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

INDIA (N.W. Province).—Wanted, a good ASSISTANT, well up in all branches of a Chemist's business; Minor qualification. Salary, 1st year 150 rupees per month, 2nd year 175 rupees per month, 3rd year 200 rupees per month; free furnished apartments; second-class passage paid out; required to start early in April; candidates must hold undeniable references.—Address, INDIA, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

MEDICAL man requires capable DISPENSER at once; advertiser requires a diligent, studious man, who will not mind helping a busy medical man in various ways, including examination of urine chemically and microscopically; advertiser will teach latter mode; plenty of time for reading; two recent first-rate testimonials required; please state age, salary required (out-door).—Address, RADIX, Pharm. Journal Office, 8, Serle Street, London, W.C.

CAPE COLONY.—Wanted, good ASSISTANT, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £150; second year, £160; third year, £170; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, CAPE, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

SANITARY INSPECTORSHIPS.—Salaries £100 to £250. Numerous vacancies. Permanent appointments. Chemists or Assistants desiring change of occupation should qualify as Sanitary Inspectors. Special Postal Course of Lessons now commencing for London, Liverpool, Leeds, Cardiff, Manchester, Leicester, Newcastle-on-Tyne and Belfast exams. Anyone of average ability can pass. Had over 250 successful candidates, and fully half had no previous knowledge of sanitary matters.—Apply, ROBERT H. MUSHENS, Sanitary Science Teacher, Sunderland.

STRAITS SETTLEMENTS.—Good opportunity for qualified ASSISTANT; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to STRAITS SETTLEMENTS, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

PARISH OF LIVERPOOL.

To DISPENSERS.

WANTED for the Parish Dispensary, Seel Street, Liverpool, a DISPENSER (Minor qualification) who should not be more than 35 years of age. Salary 33s. weekly (subject to deduction for Superannuation) with free residence, coal and gas. The Dispenser will be required, as part of his duty, to attend each morning at the Workhouse, Brownlow Hill, and act as an assistant in the Dispensary.—Applications, with testimonials, to be sent forthwith to

H. J. HAGGER,
Vestry Clerk.

Parish Offices,
Liverpool,
18th March, 1902.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM, qualified; abstainer.—E. KEMP, 11, Cheapside, St. Leonards-on-Sea.

YOUNG LADY (qualified) wants DISPENSERSHIP.—M., 60, Clapham Rd., S.W.

LOCUM, M.P.S.; town or country; disengaged.—W. SMITH, 12, Westfield Rd., Surbiton.

LADY DISPENSER; qualified; 2 years' experience.—L., 21, Woodside, Wimbledon, S.W.

ASSISTANT; good Prescriber and Dispenser; married.—RADIX, 9, Falmouth Rd., S.E.

JUNIOR, 23, requires situation in London.—J. WOOD, 151, Westbourne Terrace, W.

LOCUM TENENS; experienced Dispenser. — M.P.S., c/o Pharm. Journal, 8, Serle St., W.C.

LOCUM.—Terms moderate; qualified; disengaged; reliable; 31.—RHUS, 26, Cardiff St., Aberdare.

QUALIFIED SENIOR, 25; firstclass experience.—VITOGEN, Pharm. Journal Office, 8, Serle St., W.C.

PRINTER (Highest References) open to take charge.—PRINTER, 40, Pelham Rd., Wood Green, N.

DISPENSING or Part-time; Major; 26; good experience.—CLARKSON, 73, Lambeth Palace Rd., S.E.

TEMPORARY; 31; qualified; thoroughly experienced; disengaged.—STATIM, 35, Orsett Rd., Grays, Essex.

QUALIFIED; 28; varied experience; town or country; disengaged.—CHEMIST, 18, Liverpool St., King's Cross, W.C.

TEMPORARY MANAGER or SENIOR; qualified; disengaged; height 5 ft. 10½ in.—HOLIFIELD, 137, Finborough Rd., S.W.

AN IMPROVER, at a sea-side resort; age 20; Apothecaries' Hall qualification; small salary.—Apply, W. HILL, 53, Gerard St., Ashton-in-Makerfield.

YOUNG MAN seeks situation; smart in bottling and finishing off, wrapping, &c.; 8½ years' reference.—A. H., 27, Northport St., Hyde Rd., Hoxton, N.

MANAGERSHIP or permanency; qualified; experienced; abstainer, highest references; Photography; provinces preferred.—A. J. PAYNTER, The Manse, Dartmouth.

MANAGER, branch or otherwise; country preferred; middle-aged; salary not so much an object as a comfortable place; qualified; disengaged.—CHEMICUS, 37, Southampton Row, W.C.

QUALIFIED LOCUM; aged 27; engagements for any period booked in advance; 11 years' first-class London and Provincial experience; Photography.—RANSHAW, 16, Margaret St., Brighton.

NOTICE TO ADVERTISERS.

On account of **GOOD FRIDAY** occurring next week, the

Pharmaceutical Journal

will go to press a day earlier than usual.

Advertisements intended for the issue of March 29 must reach the Publishing Office, **8, Serle Street, Lincoln's Inn, London, W.C.,** not later than 4 p.m.

March 21, 1902. **WEDNESDAY NEXT, MARCH 26**

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows:—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

BRIGHTON.—An old-established Dispensing and light Retail Business for disposal; commanding position; near sea; centre of town; high-class trade; long lease.—Chemist, c/o Mr. Tilney, 31, Ship St., Brighton.

PRESCRIBING and General Business and premises, consisting of shop, large room and cellar, with dwelling-house (let off); North-east district; an excellent position for Prescriber and Extractor; large profits; business been neglected; satisfactory reason for disposal.—Apply, Medicus, Pharm. Journal Office, 8, Serle St., London, W.C.

Shop to Let

GLOUCESTER.—To be Let, handsome shop and premises now being entirely re-built at the centre of the City. Stone-fronted 4-storey building of modern design, with large oval window over shop front, very suitable for cash chemist or drug stores; unrivalled position for trade.—Particulars, apply Mitchell, Wotton, Gloucester.

A Copy of this Inset will be forwarded gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at more than two hundred addresses in the United Kingdom.

THE YORK GLASS COMPANY, LIMITED, YORK, have pleasure in bringing under the notice of Chemists and Druggists, a new variety of **Shop Bottles and Jars of a Square Shape,** fitted with their well-known **Phototype Recess Labels.** Doubtless the square form offers many advantages over the round shape. **London Office, 76, FINSBURY PAVEMENT, E.C.**

OPENING A PHARMACY.

IF you are about to start in business, do not fail to apply to H. Poths & Co., 4, 5 and 6, Bury Court, St. Mary Axe, London, E.C., for one of their price lists giving full particulars of sets of shop bottles and jars and lists of labels, thus saving an immense amount of labour and time.

CHEMISTS WHO WISH

to make Up-to-date Improvements, Alterations, &c., would do well to consult

H. MILLS, Shopfitter, Shop Front Builder, &c.

Works: 63-165, OLD STREET, LONDON, E.C.

CHEAP HOUSE for Window Enclosures, Drug Fixtures, Wall Cases, Dispensing Screens, Glass Facias, Stall Plates, &c.

Chemists fitted complete. Estimates Free.

CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., Chemists' Transfer Agents, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

The Business conducted by Messrs. Orridge & Co. has been known as a Transfer Agency in the advertising columns of the Pharmaceutical Journal since the year 1846, and is well known to all the leading firms in the Trade.

VENDORS have the advantage of Messrs. O. & Co.'s direct attention and advice as to value without any additional fees.

PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

Terms for Valuation on application.

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NOTICE TO ADVERTISERS.

On account of GOOD FRIDAY occurring next week,

THE PHARMACEUTICAL JOURNAL

Will go to press a DAY EARLIER THAN USUAL.

Advertisements intended for insertion in the Journal of March 29 must reach the Publishing Office, 8, Serle Street, Lincoln's Inn, London, W.C., not later than 4 p.m. on ***Wednesday next, March 26.***

The Office will be closed from Thursday evening until the following Tuesday morning.

March 21, 1902.

Photographic and Optical Supplement

TO THE

PHARMACEUTICAL JOURNAL

17, BLOOMSBURY SQUARE, LONDON, W.C., SATURDAY, MARCH 22, 1902.

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THE CHEMIST AS A PHOTOGRAPHIC DEALER.

Though the profits obtainable in the photographic trade are not large, the trade is one which naturally suggests itself as a desirable addition to the chemist's business, more especially in cases where the meagre character of the takings and profits have combined to compel the addition of side lines to the business. But, in order to make himself thoroughly acquainted with the requirements of his customers and to interpret them intelligently, it is advisable that the would-be photographic dealer should first become practically acquainted with the photographic processes.

When a photographic society exists in his neighbourhood it is also advisable to join it, as, by so doing, the chemist gets a good general idea of the requirements of those about him, besides being able to receive and impart information. In localities where there is no such society the wants of customers are apt to be so varied that it is exceedingly difficult to stock for them the number of different makes of plates and papers they ask for. The chemist is therefore recommended to practise the preparation of plates and sensitive papers for his own use, as the experience thus gained will be found valuable and useful.

If the neighbourhood be one frequented by visitors or tourists, it will often be found advantageous to have a dark room available for customers' use, in changing plates or developing trial negatives. Instructions for fitting up a dark-room were given in last year's *P.J.* Photographic and Optical Supplement (published March 30). As regards the undertaking of developing and printing, it is better to come to an arrangement with a local professional photographer rather than to do it oneself; the same applies to enlarging work, though inexpensive fixed-focus cameras for daylight enlarging can be obtained, with which such work can be done when time permits, and in many cases it may be found practicable to set apart a room for the purpose, as well as to invest in a good enlarging lantern for use with artificial light. Special attention should be paid to the photographic window, however apparently unremunerative other window shows may be. A photographic display always excites much interest, especially if a few local views, taken with apparatus exposed for sale, be interspersed with the goods. Packages of plates and papers should not be exposed in the window, more especially since the makers of those articles are always willing to supply dummies and specimen prints for this purpose.

It is difficult to lay down any fixed rules for the conduct of photographic trade, as requirements differ in every neighbourhood, but, generally speaking, it is inadvisable to culti-

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vate unduly the sale of cheap forms of apparatus, as they are seldom satisfactory to the purchaser, who has no idea of the limited use to which they are applicable, and still less satisfactory to the dealer, who will find himself very poorly paid by the small amount of profit obtainable on the articles, when the time spent in explanations and instruction, which frequently does not end with the purchase of the camera, is taken into consideration. Further, as in other matters, the public are ready enough to make use of the local chemist as a means of obtaining photographic information gratuitously, but the spending of money is quite a different matter. As one prominent chemist-photographer has pointed out, time is frequently occupied in explaining the working of a camera, bought elsewhere, to some beginner or novice, who could, with less expense and trouble, have obtained the same from the chemist, while it is especially unfortunate for the suburban dealer that most wholesale manufacturers and dealers are retailers as well, the inevitable result being that the dealer is often placed in the unenviable position of keeping sample apparatus as an advertisement for the maker, or wholesale agent, and can seldom effect a sale himself, his photographic trade consisting then of the supply of plates, papers, and oddments, the profit on the two first of which is greatly minimised by their perishable nature and endless variety. These can be obtained now from any patent medicine house, most of which also supply the cheaper kinds of cameras and other apparatus.

With regard to the choice of photographic apparatus for stock, the following are the principal sizes of cameras, and those marked with an asterisk are those in most general demand:—

Size of Screen.	Description.
3¼ by 3¼ inches	Lantern-plate size.
4¼ ,, 3¼ ,,	Quarter-plate size.
5 ,, 4 ,,	—
6½ ,, 3¼ ,,	A stereoscopic size.
6½ ,, 4¼ ,,	,, ,,
6½ ,, 4¾ ,,	Half-plate.
7½ ,, 5 ,,	—
8½ ,, 6½ ,,	Whole-plate.
10 ,, 8 ,,	—
12 ,, 10 ,,	—
15 ,, 12 ,,	—

A number of varying sizes for cheap hand cameras smaller than the quarter-plate have been recently introduced, and are a source of some perplexity and confusion, however useful they may be in securing beginners. The quarter-plate is the best and most convenient for hand camera work, not only on account of the size, but also because lenses of about 5 inches focal length can be made to cover a quarter-plate with a relatively wider aperture than in larger sizes. The 5 × 4 has also advanced in favour during the last few years, this size having originated in America. For landscape or architectural work the half-plate stand camera is, on account of its convenient size and portability, the most generally used. The larger sizes are but seldom used for direct photography, but more in connection with enlarging work.

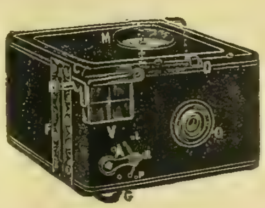
There are three main types of lenses, the single achromatic or landscape, the rectilinear or doublet, and the portrait lens; but the last is unnecessary for all ordinary purposes. There are two kinds of the rectilinear, which is the most desirable type, a doublet of short focus relatively to the diagonal of the plate on which it is to be used being called a wide angle, or portable symmetrical lens. It should be noted that a wide-angle lens only includes a wide angle when it is used on a fairly large plate, and that lenses of the same focus always include the same angle on the same sized plate, no matter what they are called. Makers often give different names to what is virtually the same lens. The equivalent focus or focal length of the lens is the distance from the lens to the ground glass when a distant object is focussed, and may be determined by screwing the lens on to the camera front, pinning a foot rule or inch tape against the wall, and arranging the camera so that the image formed by the lens fills a definite space. The image of 12 inches of the inch tape should be made to occupy just 4 inches on the screen, by shifting the camera and racking the lens in and out, as may be required. Now, without disturbing the camera, measure the distance between the ground glass and the foot rule, and multiply this distance by the amount of reduction; in the case in point this is 3. Then divide the result by the number expressing the times of reduction *plus* one squared. If with a given lens the distance between foot rule and ground glass is found to be 12 inches, then $12 \times 3 = 36$, $36 \div (3 + 1)^2 = 2\frac{1}{4}$, which is the equivalent focus of the lens.

Lenses are frequently termed "rapid" or "extra rapid," but the amount of light transmitted is solely dependent upon the size of the lens in relation to its focus, or, as it is technically called, the ratio aperture of the lens, and this is determined by the diameter of the lens or the diaphragm or stop employed. The ratio aperture, or Fx value, is determined by dividing the equivalent focus by the diameter of the stops. If a lens is found by the method already described to have a focus of 8 inches, and the largest stop has a diameter of aperture of 1 inch, then $8 \div 1 = F/8$, and if the second size stop has a $\frac{3}{4}$-inch diameter, it will obviously be F/10·6, a $\frac{1}{2}$-inch stop being, of course, F/16, a $\frac{1}{4}$-inch F/32, and so on. The series of standard apertures of diaphragms adopted in Great Britain are as follows, the decimals being carried to one figure only:—F/4, F/5·6, F/8, F/11·3, F/16, F/22·6, F/32, F/45·2, F/64. These are so calculated that each smaller stop is of half the value of each preceding larger one, and therefore necessitates double the exposure—so, taking $\frac{1}{4}$ of a second as a suitable exposure with the first, F/4, F/5·6 would require $\frac{1}{2}$ second, F/8 1 second, and so on.

All lenses working at the same ratio aperture are absolutely of the same rapidity, whether single, doublets, or portrait lenses, because only a given amount of light can pass through a given-sized hole, and as all the light that reaches the plate has to pass through the stop, that, for the time being, may be regarded as the source of light. The intensity of the light decreases as the square of the distance, and as the amount of light passing through two holes is equal to the area of the holes, or, what is the same thing, to their diameter, it is obvious that if a certain amount of light passes through a hole of one-inch diameter, and falls on a screen 8 inches distant, there will be precisely the same density of light on a screen 4 inches distant from a $\frac{1}{2}$-inch hole. Further, when the light strikes the front lens of a doublet it is condensed or made convergent, and therefore more light will really pass through a given-sized stop; a good optician makes allowance for this, and really gives the diaphragms their true ratio value, which is actually less than the equivalent focus divided by their diameter number.

For instance, if the front glass of a doublet lens be 2 inches in diameter, and the distance between the two lenses 2 inches, the diaphragm will probably be just 1 inch behind the front lens. Supposing this lens to have a focus of 16 inches, a diaphragm may be marked F/16, and, from what has been previously said, it might be supposed that the diameter of this should be exactly 1 inch; whereas, to get the true ratio value it would be probably $\frac{7}{8}$ths of an inch, and that also applies to the larger and smaller sizes. To test the true ratio aperture of any stop, take a piece of black cardboard large enough to fill the back of the camera entirely when the focussing screen is removed, with a good-sized pinhole punched in the centre of it. Screw the lens on to the camera, rack the latter out to the equivalent focus of the lens and take the whole into a darkened room. If now the card be inserted in place of the focussing screen, and a lamp or lighted candle be placed outside the pinhole in the card, the front of the lens will be seen, on examination, to be illuminated by a circle of light, the diameter of which is the true effective or working aperture of the diaphragm. The circle can sometimes be defined more clearly by dusting the lens with a little French chalk. It is impossible to obtain a lens which works at a very big aperture, and yet possesses great depth of focus, or the power to define upon a flat surface objects situated at varying distances from the camera. Theoretically, only one plane can be sharply defined at once, but owing to the reduction in size of objects and the inability of the eye to distinguish between very minute distances a lens seems to be able to depict several planes sharply, and this power increases inversely to the reduction of ratio aperture and focus, or the shorter the focus of the lens, and the more it is stopped down, the greater the depth of focus it possesses, and *vice versâ*.

There are few lenses made which will cover the plate for which they are advertised perfectly sharp with full aperture, and it is generally necessary to stop the lens down or insert the diaphragms till about F/16 is used before really satisfactory definition is obtained. That is an inherent fault, which is only got over in expensive lenses, such as those of Zeiss, Goerz, or Voightlander.



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The Films are in Cartridge form for twelve exposures, and are daylight loading and changing.

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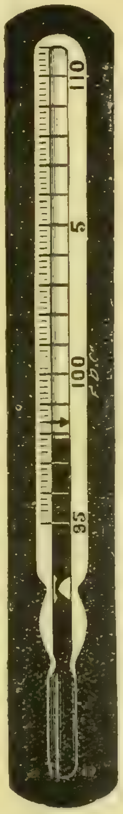

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No. 1*a*.—**Hospital Clinical,** 4 inch, in metal case	**14/-**
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In making specimens of work produced by a lens it is best to choose a simple landscape subject, with the objects at the side of the focussing screen somewhat nearer to the camera than those in the middle, and to focus at a point midway between the middle and the margin of the screen, as a better result will thus be obtained with any given aperture. The particular focus for any given sized plate is about 5 or 6 inches for a quarter-plate for normal work, and from 2½ to 3 inches for wide angle work, for a half-plate lens from 7½ to 9 inches is usual, and 4 to 5 inches for wide angle; for a whole-plate, 11 to 13 inches, and 5½ to 7½ for wide angle work. It is important to remember that all lenses of the same focus give images of identical size from the same standpoint.

The Photographic Library.

The following are the more important and generally useful works which the chemist who is also a photographic dealer should possess:

Abney's 'Instruction in Photography' (Sampson Low, 6s. net).

Brown's 'Photographic Apparatus' (Dawbarn and Ward, 1s. net).

Cole's 'Treatise on Photographic Optics' (Sampson Low, 6s.).

Meldola's 'Chemistry of Photography' (Macmillan, 6s.).

Taylor's 'Optics of Photography' (Whittaker and Co., 3s. 6d.).

Townsend's 'Chemistry for Photographers' (Dawbarn and Ward, 1s. net.).

Wall's 'Dictionary of Photography' (Hazell, Watson, and Viney, 7s. 6d.).

Any other photographic works, including those dealing with special branches, can be obtained from Messrs. Dawbarn and Ward, Limited, 6, Farringdon Avenue, London, E.C., who will send a complete list on application.

Photographic Chemicals for Sale.

Many of the chemicals enumerated in the following list will be found amongst the ordinary stock of the pharmacist, but the prices given will be found to differ somewhat from the usual retail prices, while there are some chemicals included which are not usually kept in stock by chemists. In regard to the question of price, it is obvious that dispensing rates cannot be charged for chemicals supplied for photographic purposes; the prices here given correspond to those which photographers are accustomed to pay. Chemists who are in doubt regarding the selection of stock, not knowing what chemicals to purchase, or in what quantities they should procure them, should write to Messrs. Harrington, Bros., London, who offer photographic chemicals bottled in convenient quantities for sale to photographers. The bottles are stoppered where necessary, and can be supplied either with plain labels or with the chemist's own labels. In case the chemist should prefer to purchase the chemicals in bulk—as he is certain to do if his photographic trade develops—he will find Messrs. Harrington's list a useful guide as to the articles he should stock, and the relative quantities in which he is likely to require them.

	Per Oz. s. d.	Per Lb. s. d.
Acetone	—	—
Acid acetic glacial	0 2	0 11
Acid citric	0 2	1 8
Acid formic	0 2	1 4
Acid hydrochlor. pur.	0 1	0 4
Acid nitric pur.	0 1	0 4
Acid pyrogallic	1 0	9 9
Acid sulphuric	0 1	0 6
Alcohol (0·795)	0 5	4 0
Alcohol meth. (64 o.p.) ....2s. 9d. per gallon	—	0 6
Alum ....7 lbs., 1s.	—	0 2
Alum chrome	0 1	0 6
Amidol	2 0	—
Ammonia 0·880	0 1	0 6
Ammonia bromide	0 3	2 6
Ammonia sulphocyanide	0 4	2 6
Anthion (ammonium persulphate) 100 g, bot. 2s. 6d.	—	—
Benzole (No. 1)	—	1 6
Borax	0 1	0 6
Calcium carbide (tins free)	—	0 10
Calcium chloride, exsic.	0 1	0 8
Copper sulphate, recryst.	—	1 3
Dextrine	0 1	0 6
Diogen (bottles free)	1 6	—
Diphenal (bottles free).......... (3 oz.) 1s. 9d.	—	—
Eikonogen (bottles free)	1 2	12 0
Ether meth. (0·720)	0 2	1 6
Formalin (bottles free) ..4 ozs., 1s.; 8 ozs., 1s. 9d.	-	3 0
Glycerin, 1·260	0 2	1 0
Glycin (bottles free)	2 0	—
Gold chloride ....1s. 10d. per tube; 20s. per doz.	—	—
Hydroquinone (bottles free)	0 10	9 6
Iron ammonio citrate	0 3	2 0
Iron perchloride (dry)	0 2	1 0
Iron sulphate, pure ....7lbs., 10d.	—	0 2
Lead nitrate or acetate	0 1	0 7
Magnesium powder (bottles free)	1 6	20 0
Magnesium ribbon	1 8	24 0
Mercury bichloride	0 4	3 0
Metol	2 6	—
Ortol	2 6	—
Platinum bichloride, 15 gr. tube, 1s. 6d.; 15s. per doz.	—	—
Potassium bichromate	—	0 8
Potassium bromide	0 2	2 0
Potassium carbonate (pure)	—	1 6
Potassium caustic (sticks)	0 3	1 3
Potassium chloroplatinite, 15 grs. tube, 1s. 3d., per doz, 14s.		
Potassium ferridcyanide	0 3	2 6
Potassium ferrocyanide	0 2	1 6
Potassium metabisulphite	0 3	2 7
Potassium oxalate (neutral)	0 1	0 2
Potassium sulphocyanide	0 3	3 0
Rodinal (bottles free), 3 oz. 1s. 6d.	—	5 0
Silver nitrate, 10 oz. at 1s. 11d	2 0	—
Sodium acetate	0 1	0 6
Sodium carbonate (cryst.)	—	0 4
Sodium caustic (sticks)	0 2	1 6
Sodium hyposulphite, 7 lb., 1s; 28 lbs., 3s. 6d.	—	0 2
Sodium hyposulphite gran. in boxes free	—	0 4
Sodium phosphate	0 1	1 0
Sodium sulphite	—	0 6
Thiocarbamide (bottles free)	1 6	—
Uranium nitrate	1 0	—

Asphaltum is preferably kept in powder; not in great demand. Caramel: Liq. sacch. ust. is an extremely unsatisfactory form. The best is the dry powder, "crystal caramel," to be obtained from Lichtenstein and Co., Silvertown Chemical Works, London, E. Dextrine: White dextrine should always be supplied. Pyro should always be obtained in 1-oz. bottles. Pyroxyline: Hopkins and Williams' high temperature, or else Schering's celloidin, is the best. Sodium hyposulphite: The small white recrystallised hyposulphite should be supplied, as it keeps better, is much cleaner, gives greater satisfaction, and will always fetch a higher price.

PHOTOGRAPHIC FORMULÆ.

The following formulæ have been carefully selected and revised with a view to their practical value to chemists who are photographic dealers:—

Developers.

Beach's "Pyro" Developer.—This form of developing solution, which has been in use for many years, is one of the best for negative work, and is very suitable for putting up in concentrated form in two solutions. The following is the original formula:—

No. 1.	Pyrogallol	1 ounce.
	Sodium sulphite	4 ounces.
	Sulphurous acid	3½ fl. ounces.
	Boiling distilled water	4 fl. ounces.

Dissolve the sulphite in the boiling distilled water. When cooled sufficiently add the sulphurous acid, and lastly the pyrogallol, and filter through cotton wool.

The sodium sulphite may not quite all dissolve, but this is immaterial, and the solution, when made, will be found to measure about ten fluid ounces, thus approximating to a 10 per cent. solution of pyrogallol.

No. 2.	Potassium carbonate	3 ounces.
	Distilled water	4 fl. ounces.
	Dissolve.	
	Sodium sulphite	2 ounces.
	Distilled water	4 fl. ounces.

Dissolve and mix the two solutions.

When required for use, for each two ounces of developer take of No. 1 one drachm and of No. 2 from ½ drachm to 2½ drachms, and make up to 2 ounces with water, adding from 5 to 30 minims of a 10 per cent. solution of potassium bromide, according to the exposure and the contrast required.

There is very little difference between the properties of the potassium and sodium carbonates as accelerating agents, but the former has the advantage of greater solubility.

This developer may be conveniently simplified as follows:—

No. 1.	Pyrogallol	1 ounce.
	Potassium metabisulphite	½ ounce.
	Distilled water ...to	10 fl. ounces.
No. 2.	Potassium carbonate	3 ounces.
	Sodium sulphite	2 ounces.
	Distilled water ...to	10 fl. ounces.

These may be kept as concentrated stock solutions, and may be put up for retail as follows:—

A.	No. 1 solution	1½ fl. ounces.
	Distilled water ...to	6 fl. ounces.
B.	No. 2 solution	2½ fl. ounces.
	Potassium bromide	24 grains.
	Distilled water ...to	6 fl. ounces.

A may be labelled "The Developer" and B "The Accelerator." For normal exposures take equal parts of each, and dilute with an equal part of water; thus for 4 ounces of developer take 1 ounce each of A and B, and add 2 ounces of water.

A demand is frequently experienced for a developer in single solution, which shall be suitable for positives on bromide paper or lantern plates as well as for the development of negatives. A combination of metol with quinol, or hydrokinone, is very suitable, and may be prepared as follows:—

Hydrokinone	60 grains.
Metol	20 grains.
Potassium carbonate	1 ounce.
Sodium sulphite	2 ounces.
Potassium bromide	20 to 30 grains.
Distilled water ...to	10 fl. ounces.

Heat may be employed if necessary. The metol and hydrokinone should be added last, and the solution filtered and put up in well-filled and corked bottles. In putting up such solutions as this for sale it is a good practice to employ corks which have been dipped in melted hard paraffin. Prepared as above, the solution should be mixed with an equal part of water when required for use, or if softer effects be desired it may be still more diluted.

A suitable single solution developer, having better keeping qualities, is the following:—

Adurol	80 grains.
Potassium bromide	12 grains.
Sodium sulphite	1¼ ounces.
Potassium carbonate	300 grains.
Distilled water ...to	6 fl. ounces.

Adurol, on account of its greater solubility, as well as its peculiar keeping quality in solution, is especially adapted for this form of developing solution. The formula given may be regarded as four times normal strength, *i.e.*, one part should be added to three parts of water for the average developer; but the degree of dilution may be more or less according to the exposure. It being advisable to use a more dilute developer for films or plates which may have had a minimum exposure, a stronger developer, with the addition of more bromide, being employed when full or over-exposure is suspected.

The metol-quinol developer as above may also be prepared in dry form in packet or cartridge. If this be preferred, the reducing agents should be in a separate packet or divided from the alkaline accelerator. For the latter an equivalent proportion of dried sodium carbonate will be preferable to the crystalline form, as being less bulky and free from water of crystallisation, and each packet should be packed in such a way as to be efficiently protected from the atmosphere.

By far the most convenient and simplest method of developing bromide paper positives is by means of amidol; it is, however, impracticable to keep this developer in solution ready for sale, as it will not keep in this form. A freshly prepared solution as follows will be found suitable for nearly, if not quite all, the various bromide papers on the market:—

Amidol	2½ grains,
Potassium bromide	1 grain,
Sodium sulphite	30 grains,

to each fluid ounce. When this developer is employed, it is better not to soak the paper in water, as generally recommended, before applying it; the same solution can then be employed for several successive prints without being appreciably weakened. The acid clearing solution is not necessary when this developer is used.

The following developer, the formula for which we owe to the Imperial Dry Plate Co., is especially suited for the development of very rapid shutter exposures:—

A.	Pyrogallol	50 grains.
	Metol	45 grains.
	Potassium metabisulphite	120 grains.
	Potassium bromide	20 grains.
	Water ...to	20 fl. ounces.
B.	Sodium carbonate (xtals.)	4 ounces.
	Water ...to	20 fl. ounces.

For use mix equal parts of A and B.

The Beach's developer, as given above, may readily be modified to serve the same purpose by using with it a stock solution of metol—2 grains to each drachm, with 10 grains of sodium sulphite—in place of an equivalent quantity of pyrogallol.

The use of alkaline citrates in place of bromides as retarding agents in development seems to be very infrequent, in spite of the fact that they are occasionally very suitable for the purpose. Mr. E. J. Wall, in his 'Dictionary of Photography,' says that the use of the citrates is advantageous when a negative shows plenty of detail, but refuses to gain density; the addition of a little of a dilute solution may be made and the plate left for hours, if necessary, till the required density is obtained, without the slightest sign of fog.

Intensifying and Reducing Formulæ.

Mercuric chloride intensifiers, on account of their poisonous properties, are not suitable for indiscriminate sale. The formula which finds most favour with experienced workers is that known as Monckhoven's silver intensifier.

No. 1.	Mercuric chloride,	
	Potassium bromide ...of each	10 grains.
	Distilled water	1 fl. ounce.
No. 2.	Potassium cyanide (98 per cent.),	
	Silver nitrate ...of each	10 grains.
	Distilled water	1 fl. ounce.

In making the No. 2 solution, the commercial cyanide may be used, but the quantity will require to be tripled. A precipitate of silver cyanide is formed at first, but is nearly redissolved in the excess of potassium cyanide—the clear solution should be poured off for use. Thorough washing after fixing, as well as between the application of the two solutions, is essential to success; this method of intensification is very effective, giving a clean black image of good printing quality. The plate must not be allowed to remain too long in the solution of silver cyanide or the image will be attacked; in some cases this may be an advantage when the intensification has been too great.

NON-MERCURIAL INTENSIFIER.

A good intensifier can be made without mercuric chloride by the following formula:—

No. 1.	Potassium bromide.	
	Copper sulphate ...of each	1 oz.
	Distilled water ...to make	8 ozs.
No. 2.	Silver nitrate	¼ oz.
	Distilled water ...to make	8 oz.

Directions for Use.—Lay the well-washed negative or bromide print in No. 1 solution till bleached right through, then well wash and immerse in solution No. 2 till it has darkened right through, again wash, place for a few minutes in a clean fixing bath, and for the third and last time wash.

Perhaps the safest form of intensifier to supply to the inexperienced worker is the uranium and potassium ferridcyanide one. The method given by Mr. Wall in his 'Dictionary of Photography' is to soak the plate for ten minutes in a solution of uranium nitrate, 50 grains to 1 ounce of distilled water, then drain and soak in a solution of potassium ferridcyanide of same strength till dense enough; wash and dry.

The solutions here recommended seem to be unnecessarily strong, the writer having used a modification of the formula recommended by the Kodak Company for the toning of bromide paper with success, as follows:—

Potassium ferridcyanide	18 grains,
Uranium nitrate	16 grains.
Glacial acetic acid	5 fl. drachms.
Distilled water ...to	16 fl. ounces.

The ferridcyanide should be first dissolved in the water and the solution allowed to stand for a few minutes, then the acid added, and lastly the uranium nitrate. This solution cannot be kept ready for sale, but should be prepared as required. Its possible disadvantage is that the acid may cause the film to leave the glass, either partially or wholly; probably for negative intensification this might be omitted or reduced.

As a preliminary to intensification, especially in the case of a thin and over-exposed negative, slight reduction is advisable in order to clear away any fog that may be present. For this purpose the reducer known as Farmer's should be applied carefully and in weak solution. A few drops of a saturated solution of potassium ferridcyanide are added to a 5 per cent. solution of sodium hyposulphite, the ferridcyanide solution being carefully increased if necessary until the desired effect is produced.

A reducing agent which is preferable in some respects to "Farmer's" formula is the ammonium persulphate, which is generally credited with the property of attacking the denser deposit on the high lights to a greater degree than the detail in the shadows, thus correcting in a measure the scale of gradation when the contrast is excessive. This should be applied to the negative in a 5 per cent. solution. Its action is rapid and continuating, and must be stopped at the required point by immersing the plate in a 10 per cent. solution of sodium sulphite.

Printing Processes.

In more recent times we have so many and varied ready-sensitised papers of excellent quality that the old custom of preparing one's own silver paper has gradually dropped out of use. It is, nevertheless, an undoubted fact that silver prints of excellent artistic quality and finer tones can be produced upon freshly sensitised paper. The manipulations are surprisingly simple in practice. A pure paper of suitable surface can be adapted to requirement; a Whatman paper of medium surface (not hot pressed) is very suitable, or for fine matt surfaces the pure Saxe papers may be employed. In the first place, this should be well and evenly coated with an arrowroot paste (¼ ounce to 4 ounces of boiling water) and dried. When dry the uncoated side should be marked—as the back—and the paper floated face downwards, or immersed for two minutes in the following solution:—

Ammonium chloride	60 grains,
Sodium or potassium citrate	80 grains,
Distilled water	8 fl. ounces,

and again dried.

At this stage the "salted" paper will keep indefinitely, and it may be cut up into suitable sizes for sensitising. This is effected by floating for two or three minutes on a solution of silver nitrate of a strength of 60 grains to the fluid ounce of distilled water, and dried either quickly by the fire or hung in a dark place—preferably the former, as the quicker the drying is effected the less the solution will sink into the paper. In both salting and sensitising operations care should be taken to avoid air bubbles.

Printing paper so prepared can be adapted to different classes of negatives by varying the proportions of citrate and chloride. The greater proportion of the former the greater the contrast in printing, and *vice versâ*.

The ordinary gold toning bath may be employed, but the platinum bath gives the most pleasing and artistic effects on plain salted paper prints. No specific formula is needed, but the following may be taken as a guide:—

Potassium chloroplatinite solution (1 grain in 1 drachm.)	30 minims.
Dilute nitric acid	15 to 20 minims.
Water	8 fl. ounces.

Toning Formulæ for P.O.P.

In order to obtain satisfactory results, these should never be weak in gold chloride, and this is preferably added to the stock solution at the time of selling.

A good combined toning and fixing bath is that recommended by the Kodak Company for their "Solio" paper, and it will be found applicable to most of the papers of the same class. This may be conveniently modified for retail sale as follows:—Make a stock solution—

Sodium hyposulphite	12 ounces.
Ammonium sulphocyanide	260 grains.
Lead acetate	130 grains.
Water	to 60 fl. ounces.

To each 10 ounce bottle of this add, at time of sale, 2 grains of gold chloride in solution of the usual strength, 1 grain in 1 fl. drachm. It should be stated on the label that a combined bath gives warm tones, should never be used at a higher temperature than 50° F., in order to ensure fixation, and is sufficient to tone one shilling packet of P.O.P. The prints should be more deeply printed than when separately toned and fixed.

Another formula, by which tones approaching more nearly to purple can be obtained, is, according to Anthony's 'International Annual':—

Sodium phosphate	15 grains,
Ammonium sulphocyanide	25 grains,
Sodium hyposulphite	240 grains,
Water	2 fl. ounces,
Gold chloride	1 grain,

but the excessive quantity of sulphocyanide is likely to have a softening effect of the gelatin and cause trouble if the prints are afterwards squeegeed upon glass or ferrotype plates, and probably could be reduced to half the quantity with advantage.

Separate toning and fixing are decidedly to be preferred, as being more certain to result in reasonably permanent prints than when the combined toning and fixing method is employed.

The following will be found to work well with nearly all makers' P.O.P.:—

Sodium acetate	40 grains,
Sodium sulphite	1 grain,
Ammonium sulphocyanide	20 grains,
Gold chloride	2 to 2½ grains,
Distilled water	10 fl. ounces,

This will keep reasonably well, but it is advisable either to supply the gold chloride in separate solution or to add it at time of sale. The addition of the minute proportion of sulphite, first recommended by the Ilford Company, is of service in moderating and tending to evenness of tone, and this formula may be taken as typical of many others in which the sodium acetate may be replaced by other salts, such as borax, sodium phosphate, or tungstate, etc.

It is a fact often overlooked that the quality of the tone of a print depends very greatly upon the quality of the negative employed. Weak negatives, with lack of contrast, will never yield prints of good tone, and should be reserved for a gaslight development process, by which, with care, much better results may be obtained from very poor negatives.

Acid Fixing Bath.

Sodium hyposulphite	5 ounces.
Potassium (or sodium) metabisulphite	60 grains.
Water	to 20 fl. ounces.

This will keep clean in use, and is suitable for plates or bromide papers.

Toning Formulæ for Bromide Papers.

The toning of bromide prints by means of uranium has of late fallen into disuse, there being a decided tendency to want of permanency with age and exposure to light and variations of the atmosphere. Probably the method which yields the most artistic effect, and which is least likely to interfere with the permanency of the image, is the hypo-alum method, by which the silver deposit is more or less converted into a sulphide.

The following is the procedure recommended by the Kodak Company, whose "Royal" bromide paper is especially suited for this method of treatment:—

Sodium hyposulphite	10 ounces.
Alum	1 ounce.
Boiling water	70 fl. ounces.

"Dissolve the 'hypo' in the water first, then add the alum slowly. When all is dissolved the solution should be milk-white. The solution should not be filtered, and works better as it becomes a little old. It may be strengthened from time to time with a little fresh solution." This bath should be used at a temperature of from 100° to 120° F., and the time necessary varies from 15 to 40 minutes. It will be found to work better with prints which have been developed with amidol or metol, rather than with ferrous oxalate; and it is advisable to give them a preliminary bath of

Formalin (40 per cent. solution)	1 part,
Water	9 parts,

in order to harden the gelatin, and then wash in water for a few minutes. Sundry formulæ:—

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Miscellaneous Formulæ.

NEGATIVE VARNISH.

White hard spirit varnish	15 fl. ounces.
Methylated alcohol	25 fl. ounces.

This is a cheap and readily obtainable varnish, but is inferior in durability to those specially prepared for the purpose.

If only a limited number of prints are required from a negative it may be efficiently protected from silver-staining by coating it with a plain collodion of a strength of 5 grains of pyroxylin to each fl. ounce of equal parts of methylated alcohol and methylated ether. The advantage of this is that it can be applied cold by simply flowing over the plate.

MATT, OR GROUND-GLASS VARNISH ('B. J. ALMANAC').

Sandarac	90 grains.
Mastich	20 grains.
Ether	2 fl. ounces.
Dissolve and add	
Benzene	½ to 1½ fl. ounces.

The proportion of benzene added determines the fineness of the matt to be obtained.

A STAIN REDUCER.

Thio-carbamid or thiourea is very useful for removing the stains of pyro from the films of negatives, the fingers, clothes, etc. It should be made into a solution as follows:—

Thio-carbamid	30 grs.
Chrome alum	30 grs.
Citric acid	40 grs.
Distilled water ....to make	10 ozs.

Directions for Use.—The negative may be soaked in this for ten minutes, and then well washed. The hands or fingers should be well rubbed with a coarse rag dipped in the solution.

BACKINGS FOR PLATES.

Plate backings should be easily applied and as readily removed. They may consist of collodions, varnishes, or caramels, and need not be removed prior to development. To make a caramel backing, pour 5 ozs. of caramel into half a pint of methylated spirit, with constant stirring for about ten minutes, allow to settle for half an hour, then decant or syphon off the supernatant liquid as closely as possible, collect the residue on a piece of fine linen, and allow to drain; when thoroughly drained, weigh and mix with an equal weight of burnt sienna in watery paste, and rub in half the weight of powdered gum arabic. This should be put up in small 2 oz. tins with tight fitting lids, and labelled:—

CARAMEL AND SIENNA BACKING.—A PREVENTIVE OF HALATION.

Directions for Use.—Apply to the back of the plate with a small pad, a roller squeegee or stiff brush, and rear the plate up in a light tight box to dry. This can be readily removed before development by a wet rag.

MOUNTING PASTE.

Gelatin	150 grs.
Arrowroot	300 grs.
Water	8 fl. ozs.
Methylated spirit	2½ fl. drachms.
Formalin (40 per cent. sol.)	20 minims.

Soak the gelatin for a few hours in 2 ozs. of the water; then make a paste with the arrowroot and remaining 6 ozs. of boiling water; mix, heat gently till dissolved, and as it cools add the methylated spirit and the formalin solution.

CONVERSION OF IMPERIAL TO METRIC MEASURES.

GRAINS AND OUNCES TO GRAMMES, AND GRAINS PER FLUID OUNCE TO GRAMMES PER 100 MILLILITRES.

	Grains to Grammes (Gm.)	Ounces to Grammes. (Gm.)	Grains to the Ounce — Grammes to 100 Ml.
1 ..	0·06479	28·350	0·228
2 ..	0·12958	56·699	0·456
3 ..	0·19437	85·049	0·684
4 ..	0·25916	113·398	0·912
5 ..	0·32395	141·748	0·140
6 ..	0·38874	170·097	1·368
7 ..	0·45353	198·447	1·597
8 ..	0·51832	226·796	1·825
9 ..	0·58311	255·146	2·053

EXPLANATION OF TABLE.—The first column represents the number of grains or ounces. Thus: 4 grains = 0·25916 Gm., 4 ounces = 113·398 Gm. The fourth column shows how many grammes to 100 millilitres (Ml.) are equivalent to a given number of grains to 1 fluid ounce, thus: 4 grains to 1 fl. oz. = 0·912 Gm. to 100 Ml.

THE CHEMIST AS AN OPTICAL DEALER.

The sale of spectacles, pocket magnifiers and microscopes, photographic lenses, optical lanterns, etc., may be effected by persons without any special knowledge of optical principles, but the optical business can obviously be conducted in a much more satisfactory manner generally by individuals who have been properly trained with that object in view. Chemists who have passed the Major Examination ought to possess a fair neucleus of information on which to base such a practical knowledge of optical principals as will prove of value from a business point of view, and those who have not passed that examination will find it advantageous to make themselves conversant with the subject of optics, as outlined in the following extract from the Major syllabus:—

> The undulatory theory of light; reflection; refraction; interference of light; propagation of light, the photometer; mirrors and lenses, the microscope; decomposition of white light by a prism; the spectroscope, spectrum analysis; double refraction; polarisation, the polariscope; influence of light in promoting chemical change, the principles of the ordinary photographic processes.

One of the best text-books to use in commencing the study of optics or physics generally is Cook's 'Physics' (Longmans, 2s. 6d.), which may be supplemented later by Aldous's 'Elementary Course of Physics' (Macmillan, 7s. 6d.). More specialised works must be procured subsequently, especially if it be desired to pass the examinations conducted by the Spectacle Makers' Company or the British Optical Association. And, whether the chemist who proposes to become a retail optician intends to pass one of those examinations or not, he ought to regard a sound theoretical and practical knowledge of optical principles as no more than the foundation upon which a stable superstructure may be built. Thus, if he intends to embark in the spectacle trade he ought to possess an elementary knowledge of anatomy and physiology, in order to enable him to advise customers about the choice of glasses, and to determine whether or not an oculist should be consulted in particular cases. For it should be needless to say that a skilful optician must be capable of discriminating promptly between cases of refractive error and cases of disease, also between simple optical cases and more complicated ones, which require medical or surgical treatment. He should understand the structure of the eye and the properties of light in so far as they affect vision, and be conversant with the shapes, properties, analysis, neutralisation, and transposition of lenses. The errors of refraction and accommodation ought also to be familiar to him, as well as the methods of determining and measuring those errors, including acquaintance with the trial case and its use, the principles and applications of test types and charts, and last, but not least, the use of the different instruments employed in testing and examining the eye. He should also understand how to conduct an optical business, what stock to keep, how to read and write optical prescriptions, the conditions regulating the use of different kinds of frames, the taking of facial measurements, and the methods of fitting and manipulating frames so as to obtain the best results from the lenses ordered.

The S.M.C. Examinations.

The Spectacle Makers' Company examines and registers opticians with the view of protecting the public from injury by the use of badly adapted spectacles, and the Company's diploma should be held by all practising opticians. The regulations made by the Company in connection with the examination held under its educational scheme are as follow:—

(1) No member of the optical industry can, except under exceptional circumstance, become a freeman of the Company until he has passed the theoretical and practical examination hereby prescribed.

(2) All those entering for the examination must either be actual freemen of the Company, or must undertake to become so, when passed by the examiners.

(3) Candidates may qualify at any age, but the freedom and diploma cannot be given until they have attained the age of twenty-one years.

(4) A candidate who satisfies the examiners in any of the different sections of the examination may be excused taking up such sections again. A private notice will be sent to each candidate after the examination, notifying him of the results.

(5) The Company has the power to determine how many times a candidate may compete.

For those who have been in the business some years a modified examination is held, the condition of examination being that seven years must have been spent in the optical business as master or assistant

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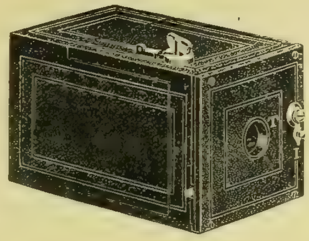

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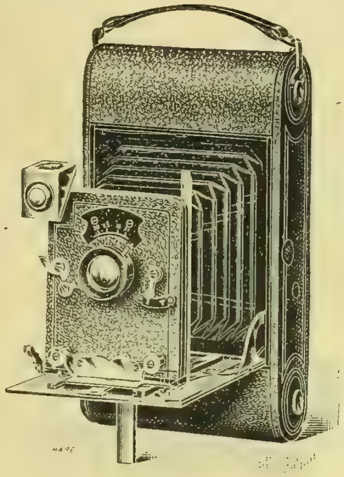

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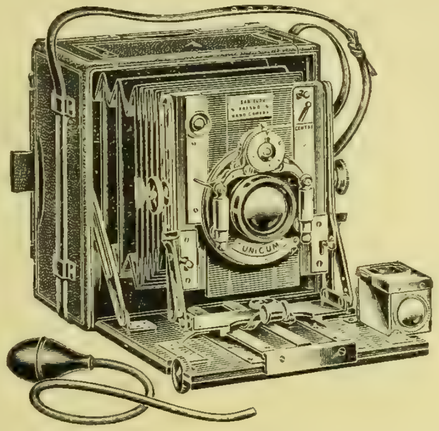

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When applying for examination an official form must be fully filled up by the candidate and sent to the Clerk of the Company, Colonel T. Davies Sewell, Temple House, Temple Avenue, E.C., at least fourteen days prior to the date of the examination. The form must bear the signed recommendation of one or more magistrates, medical men, or members of the Company, and also, when entering for the modified examination, that of a wholesale optician who can certify to the duration of the candidate's connection with the optical business. When the modified examination is claimed, the candidate should supply the fullest information to enable the Company to more speedily decide if he is so qualified.

The fee for the examination is £3 3s., which amount must accompany the application form. If a candidate fails wholly or partially he must pay at each subsequent examination an extra fee of £1 1s. Candidates who have to take the full examination are advised to take it in two parts—namely, the modified and the extra; for thus dividing the full examination no extra fee is charged. When a candidate has passed the examination, a further fee of £4 4s. is payable for Government fees and the freedom of the Company. If the candidate can produce formal indentures of apprenticeship to an optician, or if at the time of his birth his father was a member of the Company, the latter fee is £2 4s., instead of £4 4s., the Government stamp duty being £2 less. The only other necessary payment by freemen is the subscription of 1s. per quarter (quarterage) paid by all members yearly at midsummer.

MODIFIED EXAMINATION.

Candidates who are qualified for the modified examination are examined in the following subjects:—

LIGHT.—Elementary laws of light; simple laws of refraction; the index of refraction; refraction as applied to lenses and prisms; conjugate foci; formation of images; simple laws of reflection as applied to curved and plane mirrors.

OPTICS RELATING TO VISION.—General anatomy of the human eye. The course of light passing through the media of the eye alone, and modified by spherical and cylindrical lenses and prisms. Hypermetropia; myopia; astigmatism; presbyopia. Instruments commonly used for determining the refraction of the eye: Trial lenses—test types.—Astigmatic chart—the optometer. The principle of the ophthalmoscope. The principle of, and various forms of, spectacles.

PRACTICAL WORK IN VISUAL OPTICS.—Testing a plane surface; measurement of focal length of spherical, cylindrical and compound lenses; use of the spherometer or lens meter; measurement of conjugate foci; determination of the axis of a cylinder, and the angle of deviation of a prism; analysis and neutralisation of spherical, cylindrical and compound lenses, and lenses combined with prisms; transposing; centreing and adjustment of spectacle lenses and frames; face measurement for spectacles. Knowledge of the materials and of the workmanship employed in the manufacture of lenses and frames; use of pebble tester. Reading of oculists' prescriptions; giving out orders for lenses and frames.

There are three sections in the modified examination:—An oral examination in the theory of visual optics, an oral examination in practical work, and a written paper.

FULL EXAMINATION.

For the full examination candidates are examined in the following subjects, in addition to the subjects of the modified examination:—

ELEMENTARY MATHEMATICS.—Arithmetic; algebra to simple equations; the measurement of trigonometrical angles; the elementary use of tables of natural sines, cosines, and tangents, and of tables of logarithms and reciprocals.

HEAT.—A simple knowledge of the construction and uses of instruments for measuring temperatures, atmospheric pressure and moisture.

PRACTICAL WORK WITH OPTICAL AND MATHEMATICAL INSTRUMENTS.—Simple experiments on an optical bench with lenses and mirrors. Umbra and penumbra; determination of the brightness of lamps and illumination of surfaces by the shadow and grease-spot photometer, use of the Vernier and slide-rule. The candidate will be also examined in the properties of lenses, including focal length, conjugate foci, spherical and chromatic aberration, astigmatism, centreing, magnifying power, field of view, and aperture, so far as they are connected with a practical knowledge of the use and adjustment of one only of the following optical instruments; the choice being with the candidate:—

(A) THE PHOTOGRAPHIC CAMERA.—The construction of various kinds of photographic lenses and the use and requirements of each; use and calculation of stops.

(B) THE MICROSCOPE.—Experiments with simple and compound microscopes; the use of water and oil immersion lenses; the use of the sub-stage-illuminator; the measurement of the index of refraction of a plate of glass or crystal by means of a microscope; the use of the eye-piece and stage micrometer.

(C).—NAUTICAL AND SURVEYING INSTRUMENTS.—The sextant—its use; method of correction and adjustment, including tests—that arc and image are in the same plane—that horizon-glass is set—that axis of telescope is parallel to plane of arc—that the two mirrors are parallel with Vernier at zero—other instruments of the class.

(D) PROJECTION INSTRUMENTS.—The optical lantern; sources of illumination; condensers and their function; use of total reflection prisms; projection of spectra; polarised light.

In this examination there are also three sections:—"A written paper in mathematics, a written paper in general optics and heat, and an oral and written examination on the selected optical instrument.

British Optical Association Examinations.

The B.O.A. examinations are open to persons over twenty-one years of age, and successful candidates are required to take up the membership of the B.O.A., besides signing a form expressing willingness to comply with the regulations of the Association. Full particulars, copies of the regulations, dates, and syllabus of examinations can be had on application to the Secretary of the Association, Mr. H. Sutcliffe, 17, Shaftesbury Avenue, W.

The (B.O.A.) Optic Grade Examination.

This grade is open to all comers complying with the regulations. The examination fee required by the Association is £1 11s. 6d. This grade may be regarded as the matriculation of the profession. A good sound knowledge of the elementary laws of light is required, and an acquaintance with such spectacle instruments as the spherometer or lens measure, pebble tester, neutralising by trial lenses, the deciphering of prescriptions, and frame fitting. Great stress is laid by the examiners on the ability to judge the workmanship of frames. At the examination, a written paper lasting from sixty to ninety minutes is generally set; about thirty minutes are taken up also with the practical portion, the duration of the latter time depending on the discretion of the examiners. The certificate granted by the Association to a successful candidate has the words in red ink, "Certificate by examination—Optic grade," and further states that the holder is a member of the British Optical Association, and is therefore entitled to use the affix "B.O.A."

The (D.B.O.A.) Dioptric Grade Examination.

This examination is open to principals complying with the regulations without previous examination being necessary. Assistants and managers cannot enter unless they hold a twelve months' optic grade certificate. The examination fee required by the Association is £3 3s. This grade is proportionately much more difficult than the optic grade. It is necessary to pass in the practical subjects of the optic grade, unless the candidate already holds the certificate of the B.O.A. A written paper is set on light, the standard required being higher than that of the optic grade; although not much stress is laid upon mathematical formulæ, and therefore should not present any extraordinary difficulties. More attention is now given to questions on the anatomy of the eye than in previous years. A special point also is the reduction and alteration of complicated prescriptions. About an hour or more is devoted to personal testing by the trial case of subjects found by the examiners. The candidate must show himself thoroughly conversant with the use of his test case and types. The entire examination as a rule lasts about three to four hours. The certificate granted by the Association to a successful candidate in addition to signifying membership, and ability to use the affix "D.B.O.A.," points out that the holder has satisfied the examiners with his knowledge of optical materials and the subjective method of sight testing.

The (O.B.O.A) Ophthalmometric Grade Examination.

This examination is open to all principals complying with the regulations, and who have held for one year the dioptric certificate of the Association, without previous examination, and to all assistants and managers holding a two years' dioptric certificate of the B.O.A. The examination fee required by the Association is £5 5s., unless the applicant was already a member of the Association previous to October 22, 1896, in which case the fee is £2 12s. 6d. This grade is not by any means an easy one. It may, in fact, be regarded as the doctorate of the profession. Not only must the candidate be well grounded in the subjects of the optic and dioptric grades, but must in addition be able to handle in a practical manner the retinoscope and ophthalmoscope. With regard to the latter instrument far more stress is now laid on the indirect method than in former years. The certificate granted by the Association to a successful candidate, in addition to signifying membership and power to use the affix O.B.O.A., states that the holder has satisfied the examiners with his knowledge of optical materials, with his knowledge of sight-testing subjectively, and with his ability to use the ophthalmoscope in the diagnosis of the causes of failure of good vision.

Books on Optical Subjects.

The following is a list of books recommended as suitable for candidates intending to sit for the examinations of the Spectacle Makers' Company, or the British Optical Association, or for chemists who, without intending to sit for any of those examinations, are desirous of perfecting their knowledge as opticians:—

Visual Optics.

Hartridge's 'Refraction of the Eye.' (Churchill), 6s.

'The Optician's Manual' (The Keystone, U.S.A.), 9s.

'The Optician's Handbook' (Gutenberg Press, 125, Fleet Street, E.C.), 3s. 6d.

General Heat and Light.

Glazebrook's 'Heat and Light' (Cambridge University Press), 5s.

Glazebrook's 'Physical Optics' (Cambridge University Press), 7s. 6d.

Mathematics.

Pendlebury's 'Elementary Arithmetic' (Bell and Sons), 4s. 6d.

Hall and Knight's 'Elementary Algebra' (Macmillan), 3s. 6d.

Hamblin Smith's 'Elementary Trigonometry' (Longmans), 4s. 6d.

Special Subjects.

In addition to the above subjects, opticians will also find it necessary to possess a practical acquaintance of the use and adjustment of the photographic camera, the microscope, the projection instruments, etc., all of which are fully dealt with in the following works:—

Traill Taylor's 'The Optics of Photography and Photographic Lenses' (Whittaker), 3s. 6d.

Gage's 'Microscope and Microscopical Methods' (Comstock Publishing Company, New York), 7s. 6d.

Glazebrook and Shaw's 'Practical Physics' (Cambridge University Press), 7s. 6d.

Lewis Wright's 'Optical Projection' (Dawbarn and Ward), 6s.

Appliances Required by an Optician.

A dealer in spectacles requires a number of appliances in order to enable him to supply exactly what is required by customers. The chief appliances required are a trial case, trial frame, and test types. The trial case comes first in the list of needful appliances. It should contain a full range of concave and concave spherical lenses, from 0°·25 to 20°, and of convex and concave cylinders from 0°·25 to 6°. All the lenses and cylinders should be in pairs, and mounted with rings and handles, so as to avoid chipping and obviate continual cleaning, with accompanying waste of time and loss of polish as the surfaces become scratched. The rims should be as light as possible, and such as will enable the lenses to be inserted into the trial frame with either face to the front. The lenses should also be light, and if they are secured by screws it will be easy to replace one when broken. It will be found advantageous to have concave and convex lenses mounted in rings of different colours, so as to avoid confusing them. The trial case should also contain a series of prisms, those from 1° to 4° being in pairs, also various discs, including opaque and black, for occluding the eye which is not being tested, stenopaics for testing astigmatism, and a pin-hole disc for determining whether the error is such as can be corrected by lenses. Other essentials are a Maddox rod, double prism, red and green glasses, and smoke and blue glasses of different shades.

The trial frame should be light, strong, rigid, and being preferably made of finely tempered nickelled steel. It must also be adjustable, by means of easily-manipulated thumbscrews, as to interpupillary distance, the height of the nose, the set of the bridge, and the length of the arms, the last-mentioned parts being curled so as to pass over the backs of the ears, and keep the frame firmly in place. Each eyepiece should have three carriers, so as to accommodate a spherical lens, a cylinder, and an extra-spherical lens or opaque disc. The front carrier should revolve, so that the axis of a cylinder may be placed in any desired meridian, and the frame itself should bear a scale with bold numbers for angle rotation, indicating the different meridians. The lenses should be inserted sideways, and retained in the carriers by means of springs.

Test types for distance should consist of clear black block letters on a white card, or white block letters on a black card, the letters being graded down to a line lower than that which

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The undersigned have now issued a New Edition of their Photographic Requisite List, which will be supplied to any Chemist dealing in these goods on application.

A Special feature is made of supplying the List with Customer's Name and Address, at very Nominal prices.

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"Hanover" No. 2 ½-Plate Outfit	**£6 15 0**
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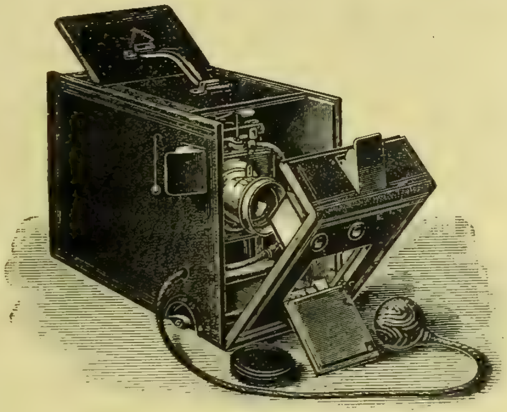

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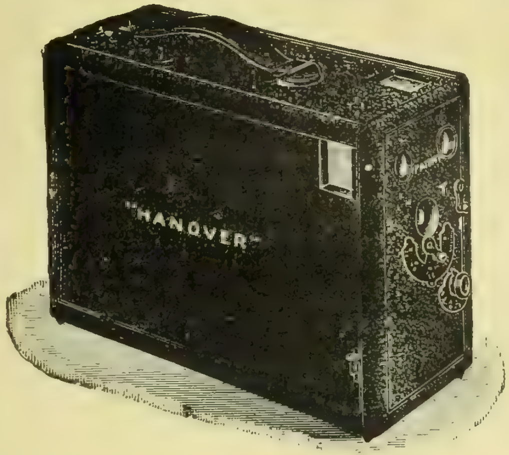

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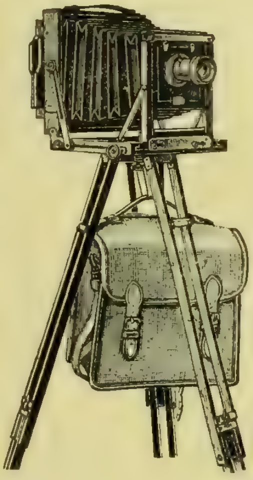
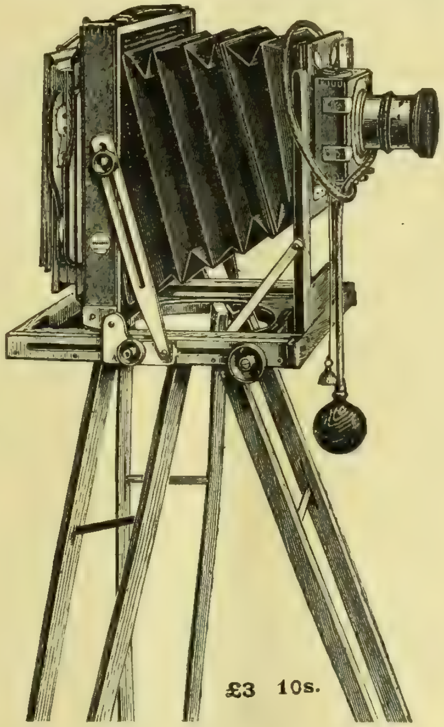
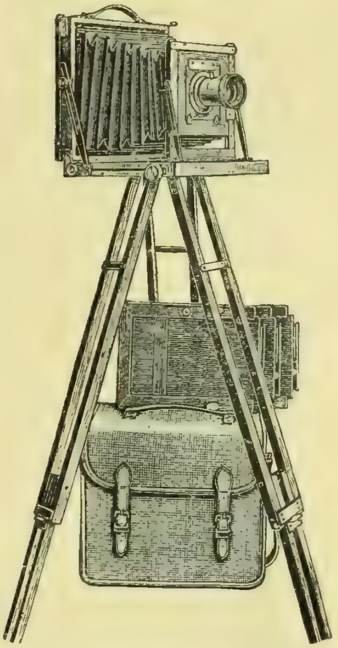


¼-Plate	..	£3 0 0
½-Plate	..	£4 4 0



£3 10s.

No. 2 "Hanover" Outfit.



½-Plate	..	£6 15 0

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represents the normal visual acuteness for the distance at which testing is performed. For a distance of 6 M. the type must be as small as No. 4·5, or one lower than No. 6, but for a distance or 4 or 5 M. No. 3 type must be on the card. Hand-cards are preferable to folding books for testing the sight at reading distance. All test cards should be perfectly clean and uncovered, as glass reflects too much light.

In addition to the trial case and test types, it is necessary to have a tape line graduated in centimetres, or a near point measure, while other useful appliances are a set of trial spectacles and eye glass frames, a lens measure, a record book, frame measuring cards, small screwdrivers, and flat and hollow chop pliers. The distance test-card should be fixed to the wall some 6 M. from the person whose eyesight is to be tested, with an astigmatic chart beneath it, as nearly as possible in a straight line with his eyes. Diffused light alone should be used with distance test-cards, and being allowed to fall on the cards, but shaded from the customer's eyes. If artificial light be employed, it should be condensed on the cards by means of a concave reflector, which will also serve as a screen. For use with reading card, there should be an artificial light on an adjustable bracket, behind the customer. Further information on this and other practical points of importance to the retail optician will be found in special articles published in the *Pharmaceutical Journal* for October 22 and December 31, 1898, and for February 25 and May 27, 1899, copies of which can still be obtained from the publishers, 8, Serle Street, London, W.C., at eightpence each.

THE CHOICE OF A MICROSCOPE.

The sale of microscopes and accessories constitutes a desirable addition to the chemist's business, and may be made to yield much profit, both directly and indirectly. So far as the chemist's personal requirements are concerned, the chief essentials of a useful and fairly complete microscope are a firm stand, a short body to take eye-pieces of R.M.S. No. 1 gauge, a plain stage, with sliding bar, fine and coarse adjustments, plane and concave mirrors, iris diaphragm, substage condenser, one or two eye-pieces, and two objectives of moderate angle, the 1 in. or ⅔ in. and ¼ in. or ⅙ in. being the most generally useful. A similar outfit will meet the needs of medical students and of most amateurs who propose to do serious work with the microscope, but a very great variety is offered by the different makers of that instrument, and attention is here restricted to microscopes which have been proved to be satisfactory.

Messrs. W. Watson and Sons, 213, High Holborn, London, W.C., supply a "School" Miscroscope, which meets every want for rough work and ordinary students' purposes. It has no fine adjustment, but the diagonal rackwork and large milled heads enable a ⅛ in. objective to be focussed with comfort. The stand alone, with large square stage, plane and concave mirrors, eye-piece, and case, costs £2 7s. 6d. ; with a 1 in. objective the price is £3 3s., and with a 1 in. and ⅙ in. objectives, £4 10s. The "Fram" Microscope, made by the same firm, has both fine and coarse adjustments, and costs £6 15s. with 1 in. and ⅙ in. objectives. It is very suitable for bacteriological and photo micrographic work, as is also the "Edinburgh Students'" Microscope, which is made in a variety of designs, and can be adapted for all purposes for which a microscope is usually required. The most complete form of this instrument, with 1 in. and ⅙ in. objectives, costs £12 15s., but simpler forms, with the same objectives and both fine and coarse adjustments, can be obtained for £7 5s. and upwards. Various other microscopes and all kinds of accessories are described in Messrs. Watson's list, a copy of which will be sent post free to any reader of the *P.J.*

Mr. C. Baker, 244, High Holborn, London, W.C., also makes microscopes of the highest quality. The "Model Histological" Microscope, with fine and coarse adjustments, double nose-piece, and ⅔ in. and ⅙ in. objectives, costs £6 17s. 6d., and the "Advanced Student's" Microscope, £10 10s. ; the "D.P.H." Microscope is another excellent instrument, which costs only £8 8s., in its simplest form, without objectives. A copy of Mr. Baker's list should be possessed by every chemist interested in microscopical work, as it contains particulars regarding a great variety of accessories and mounted objects.

Messrs. R. and J. Beck, Limited, 68, Cornhill, London, E.C., make a specialty of low-priced microscopes, their "Star" Microscope, with fine and coarse adjustments and ⅔ in. and ⅙ in. objectives, costing £4 15s. only. Their "London" Microscope, an instrument on the Continental model, costs £5 12s. 6d. with the same adjustments and objectives, and the "British Student's" Microscope costs £5 19s. 6d. All three instruments are well adapted for general use.

Messrs. Bausch and Lomb, 35, Aldermanbury, London, E.C., supply a fine stand of the American type, with fine and coarse adjustments, diaphragms, etc., for £6, including two eye-piece and ⅔ in. and ⅙ in. objectives. A low-priced instrument for rough work is the "Continental" Microscope (A), of this firm, with rack and pinion coarse adjustment and large stage ; this is supplied with one eye-piece and two objectives—divisible 1½ and ½ in., and special 1/5 in.—for £2 17s. 6d., and answers well for the examination of starches, drugs, etc., etc. Another form, with coarse and fine adjustments, double nose-piece, one eye-piece, and ⅔ in. and ⅙ in. objectives, costs £5 12s. 8d.

Messrs. Ross, Limited, 111, New Bond Street, London, W., make a Students' Microscope, with two eye-pieces, two objectives, double nose-piece and case, at prices varying from £6 10s. to £10. The stands are very strong, steady, and portable, and the objectives are of superior quality. More expensive stands and all kinds of accessories are also supplied by this firm.

Messrs. James Swift and Son, 81, Tottenham Court Road, London, W., are also famed for their students' microscopes. Low-priced but efficient instruments are also produced by Messrs. W. Johnson and Sons, 188, Tottenham Court Road, London, Messrs. James Parkes and Son, Birmingham, and various other makers, at prices ranging from about five or six pounds upwards. Good second-hand microscopes and objectives by standard makers can frequently be obtained at greatly reduced prices from Messrs. Watson and Sons, Mr. C. Baker, or Messrs. Clarkson and Co., 28, Bartlett's Buildings, Holborn Circus, London, E.C.

PHOTOGRAPHIC NOTES.

BY A PHARMACEUTICAL CHEMIST.

Copying Line Drawings and Engravings.—At first sight no photographic operation would appear to be simpler and easier than this, but in practice it is by no means so easy as it seems, and possibly, therefore, a few hints on the mode of procedure may be useful. It is, perhaps, needful to preface my notes with a caution to observe the laws of copyright, to see either that none exists in the drawing or engraving of which a copy is required, or to obtain the requisite permission, which is seldom refused, especially if it be not required for commercial purposes. The camera should preferably be one which can be focussed from the back; so that the position of the lens is not altered in the operation; the drawing should be pinned with drawing pins, upside down, in such a position that it may be evenly lighted. Daylight is to be preferred to artificial light, as there is less tendency to show the grain of the paper. A lens of short focus and flat field is the most convenient to employ, but the ordinary type of rapid rectilinear will be found quite applicable, provided the camera has sufficient extension of bellows to admit of its use, as if the copy be required of the same size as the original, the extension will require to be double that of the focal length of the lens. In such a case it will be necessary to remember that the aperture of the lens will then be of but half its normal value; that is, supposing the normal aperture employed to be ƒ16, when the extension is so doubled, it will be equal only to half that value or ƒ32, and the exposure should be quadrupled. We now come to the question of the plate: this should be of the slowest kind to obtain the best results with the greatest ease, the slower varieties being of finer grain, and capable of giving greater contrast than those generally employed for ordinary work. A slow plate also allows much more latitude in exposure than the more rapid kinds.

The Most Suitable Gelatin Plates are those used for photo-mechanical purposes; but if those be unavailable a plate coated with a lantern transparency emulsion may be used. a collodion plate is preferable in some respects to one coated with a gelatin emulsion, and if much work of this class is required to be done suitable collodion emulsion can be obtained commercially which, with a little practice, can be most economically and satisfactorily employed. In the absence of more suitable and slower plates I have used those of medium rapidity and obtained fairly good results, the chief cause of failure I believe to be insufficient exposure. Whatever plate be used, a full exposure is essential to success, for any tendency to forced development is certain to result in a very unsuitable negative; and this applies even more particularly to the more rapid plates than to the less sensitive ones, the former being the more liable to fogging in development. As the greatest possible contrast is required —*i.e.*, the greatest density in the white ground, combined with the greatest clearness in the lines—the developer should be strong in the reducing agent and in the restrainer, and the accelerator should be increased with caution.

Of the Newer Developers, glycin or a mixture of glycin with hydrokinone, is generally recommended, but in my own experience pyrogallol has always proved satisfactory, the proportions employed being about as follows: Pyrogallol, 5 grains; potassium carbonate, from 20 to 30 grains; sodium sulphite, 60 grains; potassium bromide, from 8 to 12 grains; to each ounce of water. If these operations be carefully carried through, the negative should require no further treatment after fixing; but if it should appear too thin, and require intensification, it should first be carefully cleared with potassium ferridcyanide as follows:—Transfer the plate without washing from the fixing bath to a dish of clean water, and add a few drops of a 10 per cent. solution of the ferridcyanide, and allow this to act until the lines of the image are quite clear, gradually increasing the ferridcyanide solution if necessary, then wash thoroughly for at least two hours, and intensify by first bleaching with the following:—Mercuric chloride, potassium bromide, of each 10 grains to each ounce of water. Again thoroughly wash and apply silver nitrate, potassium cyanide (pure crystals), of each 10 grains to each ounce of water. The quantity of potassium cyanide will be found to nearly, if not quite redissolve the precipitate of silver cyanide at first formed but if the commercial cyanide (33 per cent.) be used, three times the above proportion will be necessary. The clear solution should be used, any little remaining precipitate may be disregarded. This intensifier (known as Monckhoven's) gives an intensely black image, with clearness in the lines.

The Manipulations Here Described are quite as suitable for the copying of manuscripts; sometimes, however, these, as well as drawings or engravings, may be faded, and the ground, which was originally white, may have become yellowed by age. Should this be the case, it will be better to use a slow isochromatic plate, in conjunction with a yellow screen; the depth of screen to be determined by the degree of yellowness in the subject. The collodion emulsion above referred to, which is supplied by Messrs. Penrose and Co., of Farringdon Road, with the so-called "sensitising" solution, or, rather, an alcoholic solution of a dye, to render the emulsion sensitive to the yellow rays, will be found excellent when the subject presents exceptional difficulty. The paper positives are most conveniently produced by using a slow emulsion contact paper, such as Velox, Gravura, or any other of the numerous "gaslight" papers. The exposure should be slightly shorter than required for printing from ordinary negatives, from which the procedure differs in no other respect. Magnesium ribbon will be found the most suitable illuminant. If a number of copies are required, and expense be a consideration, the iron and silver printing process described on page 635 of the last volume of the *P.J.* will prove a convenient and very suitable method for obtaining them.

Bromide Paper for Negative Reproductions.—For the production of enlarged negatives, the larger sizes of glass plates are not only expensive, but difficult to store safely on account of their fragility, and the suitability of bromide paper, preferably of a rapid brand, for this purpose is very generally overlooked. Very excellent enlarged negatives can, however, be produced by this means, with the advantages of being unbreakable, inexpensive, and capable of being printed from either side, so that they are equally as suitable for carbon printing by single transfer as for platinotype or bromide work. The disadvantages as compared with glass plates are that they take rather longer to print from, and the possibility of the grain of the paper appearing in the resulting positive; this last, however, it not always a disadvantage, and can be considerably modified, if desired, by treating the paper negatives with white wax upon a hot plate. Several manufacturers supply bromide emulsion papers specially prepared for negative work, which are excellent for the purpose; but the ordinary paper when thin and fine in grain will be found to yield good results.

The Storing of Sensitised Carbon Tissue. The remark is frequently made that the advantages of the carbon printing process seem to be generally so little appreciated by amateur photographers. It certainly cannot be from any exceptional difficulties to be contended with; but I think the fact that the sensitised tissue will not keep, under ordinary conditions, more than from twelve to fourteen days, and that it increases in sensitiveness from day to day during that period, thus rendering it very difficult to accurately determine the necessary exposure has probably been one of the chief obstacles to its more general adoption. It has been recently discovered that if the tissue be kept perfectly free from moisture and atmospheric variations, that its keeping qualities and stability may be extended to at least three months. The Autotype Company now supply flat airtight storage tins, with a receptacle for calcium chloride, for the cut pieces of tissue, thus removing one of the principal difficulties in the way of the would-be carbon worker. When in the desiccated state, the tissue is very brittle, and before being used for printing should be exposed for a time in a dark and damp place until it has resumed its original condition. It may be as well to point out that there is no great difficulty in sensitising the tissue for one's self—it can be bought in any colour or quantity in the insensitive state. The sensitiser merely consists of a solution of potassium bichromate of 5 per cent. strength, to each 20 ounces of which is added 5 minims of strong ammonia solution. In this the tissue should be immersed for two minutes in summer or three minutes in winter, the usual precautions being taken against the formation of air-bells. It is then squeegeed into contact with a ferrotype plate and dried in a moderately warm room, the temperature of which should remain as even as possible. If the pigmented gelatin be coated upon a paper support of a non-actinic colour, the drying may be effected in ordinary light; if otherwise, it must be protected from daylight.

Green Iron Ammonium Citrate.—In the *P.J.* of December 28, I stated that the iron in this preparation, as supplied by Messrs. Hopkin and Williams, had been ascertained to be in the ferrous condition, thus differing from the brown scales of Ferri Ammon, Cit., P.B. In the same issue of the Journal a working formula for the preparation of the green scale compound was given, by which it appeared to me that a ferric compound would result. I have made the scale compound successfully by this formula—using one-sixteenth of the quantities there given—but on adding the strong solution of ammonia to the acid solution in the last stage of the process, found that the liquid did not turn green on standing as there stated, and as it appeared to be excessively acid, I gradually added strong solution of ammonia diluted with two parts of distilled water, until a bright green solution resulted. The additional quantity of ammonia solution required was 1 fluid drachm, representing an increase of 50 per cent. The green iron ammonium citrate thus prepared I find answers admirably for the photographic printing process for which it was intended, but an examination of the resulting solution revealed the fact that the iron was in the *ferrous* state, reduction having evidently occurred in contact with the citric acid and ammonia. I have experimented with the B.P. preparation, but with negative results. It may, therefore, be concluded that for the printing process in question, the iron must be in the *ferrous* condition.

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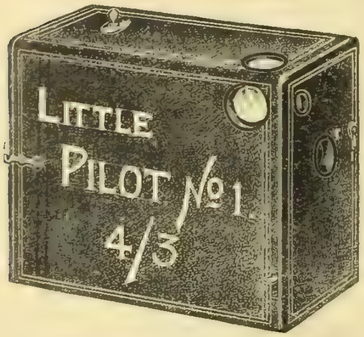

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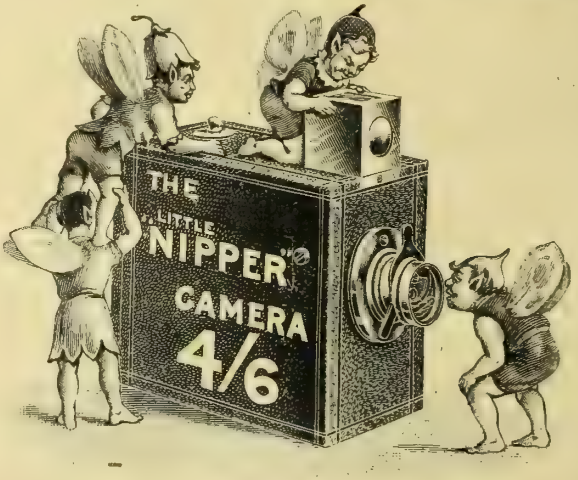

The PILOT Cameras are a new introduction this season. There are four patterns in all, and are put on the market as serviceable Photographic Cameras at POPULAR PRICES.

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Takes pictures $2\frac{5}{16} \times 1\frac{1}{4}$.			
PILOT	**2** ..	"	**5/-**
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PILOT	**3** ..	"	**7/6**
Takes $\frac{1}{4}$-**plate** pictures.			
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All PILOT Cameras are complete in cardboard boxes with **coloured design** labels and BOOK OF INSTRUCTIONS.

Little NIPPER Camera No. 1	PRICE	**4/6**
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Little NIPPER Camera No. 2	"	**6/6**
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100,000 Little NIPPER Cameras were sold last year.

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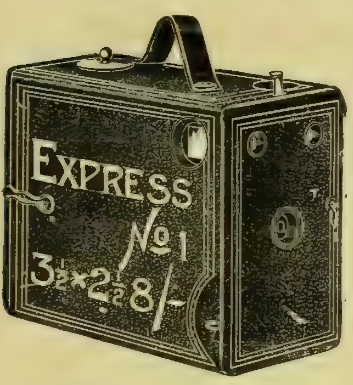

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Each in Cardboard Box with BOOK OF INSTRUCTIONS.

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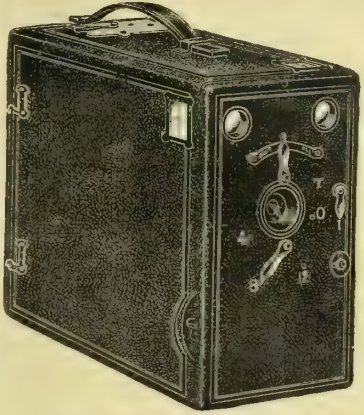
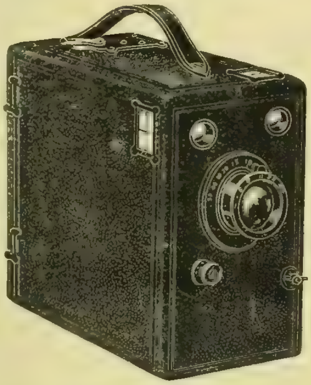


No. 00, with Magnifiers, **25/-**.



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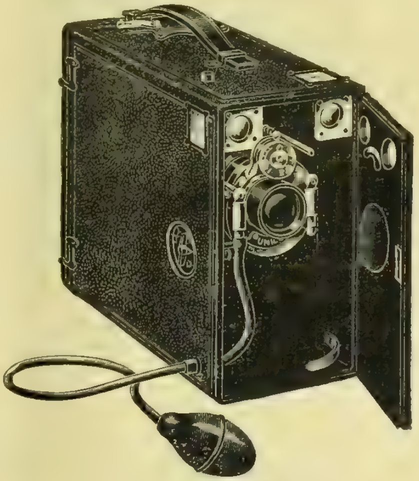

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Revised Patterns and New Models.

HANDSOME CAMERAS.

Prices.

No. 0, ¼-plate ..	**21/-**
No. 00, ¼-plate ..	**25/-**
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No. 1A, ¼-plate ..	**31/6**
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No. 1, ¼-plate ..	**42/-**
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Ditto, superior quality Lens and finish.	
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PHOTOGRAPHIC NOTES BY THE WAY.

THE THIRD PHOTOGRAPHIC AND OPTICAL TRADES EXHIBITION will be held next month at the Portman Rooms, Baker Street, London, W. It opens on April 11, and remains open each day from 12 to 10 o'clock p.m. until April 19. All the novelties for the season will be exhibited, amongst them being a number of photographic apparatus that have never before been shown. The visitor will thus have an opportunity afforded him of seeing and examining the different makers' specialties under one roof. The last exhibition, held in 1900, was a complete success, but from reports that have come to hand, we understand that the forthcoming event will altogether eclipse the last. The list of exhibitors is a very representative one, the most important firms in the trade having already taken spaces, and there will be something to interest everyone, whether amateur or professional, or dealer. Arrangements have been made for a series of attractive and interesting entertainments. Full particulars of these attractions will be announced later. There will be half-hour lantern lecturettes and demonstrations by well-known names in photographic circles. In addition, the Imperial Orchestra will be in attendance, and will play selections of music in the Main Hall at intervals during each day. Smoking and refreshment rooms will also be provided, the catering being carried out by the Portman Rooms Co. The admission to the exhibition is 1s., and there will be no extras for any of the entertainments or demonstrations.

THE MITA LIGHT is a new form of incandescent lamp which the *British Journal of Photography* thinks should be particularly useful in the hands of amateurs for enlarging and optical lantern purposes, in which benzine is preferably used as the illuminant. According to the *Photographisches Wochenblatt*, the lamp gives a light of 300 to 400 candle power. A horizontal tube, with the burner at one end and the benzine-holder at the other, is attached to a vertical rod fixed on a stand, so that the height of the light may be regulated as desired. Air is pumped into the benzine-holder by means of an indiarubber ball, and the benzine thus burns under pressure. A small tray near the burner is filled with spirit to heat the benzine at starting, and the lamp will then give a steady light for some time without attention, at ordinary temperatures. Ordinary coal gas and oxygen give a light equal to about 150 to 250 candles; the new light is consequently about twice as powerful.

THE KEEPING AND PACKING OF DRY PLATES has been the subject of inquiry by a committee appointed by the Société de Photographie Française, and the *British Journal of Photography* publishes the conclusions arrived at by the committee with regard to extra rapid plates, which were the only ones tried. The constitution of the emulsion was found to be the principal element affecting the life of the plate, but the mode of packing was of importance as a secondary factor. The keeping quality was considerably prolonged by substituting sheets of suitable paper for the strips of cardboard placed at the edges. The sheets were cut 1 to 2 Mm. smaller than the plates, small post rives (10 kilos weight), royal rives (30 kilos weight), and bichromated exercise paper were used, and it was found that small post rives, and especially the royal, were of great value for the purpose.

MESSRS. W. BUTCHER AND SONS' NEW PREMISES, ST. BRIDE STREET, E.C.

A USE FOR STALE OR OLD PLATES is suggested by a correspondent of the *Photographic News*, who offers his suggestion to those who, having in hand plates not devoloped, nor yet suitable for exposure, wish to make use of them, and to others who, having occasion to make carbon transparencies, find a

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difficulty in preparing glass fit for the purpose. In the latter case, the trouble is to coat glass with gelatin evenly and without bubbles, and, unless the coating is even and bubbleless, the transparency will be worthless. But if, instead of labouring over coating operations, a box of useless plates is available, those can be used as the desired support. They must first be fixed and washed as a preparation, and then treated to a bath of chrome alum or formalin solution before they are ready to use.

A Point in Intensifying Negatives is published in the *Bazaar*, where it is pointed out that in most intensification processes the negative is bleached in mercuric chloride, after which it has to be well washed. If that be done by laying it under a tap, and allowing the water to fall upon it for a longer or shorter period without attention, irregularities may be expected when the blackening process is carried out. In bleaching the image, not only is the silver converted into silver chloride, and mercurous chloride deposited in the film, but the mercuric chloride is supposed to form an unstable combination with the gelatin, and prolonged washing is necessary to get rid of this imperfectly combined salt. If a bleached negative which has been washed as described be examined, the parts upon which the water fell with the greatest force will appear slightly opalescent, while the other parts will be of a fuller white, and those whiter parts will acquire the greater density in the next operation. If the water be allowed to act through a rose, the difficulty will be partially overcome; but even with this convenience constant attention should be given to see that the washing is even over the whole surface of the plate.

Combined Toning and Fixing Bath.—The following is given in the *Photographic Gazette* for brown and sepia tones on gelatino-chloride paper:—

Sodium tungstate	6 Gm.
Ammonium sulphocyanide	10 Gm.
Sodium hyposulphite	85 Gm.
Water	280 C.c.
When dissolved, add gradually	
Water	50 C.c.
Gold chloride	0·5 Gm.

By printing very little more than is required in the finished print some very pleasing sepia brown tones are obtained, particularly with matt papers.

Over-exposed Negatives.—According to a writer in the *Photographic News*, Dr. Reiss suggests, in the *Revue Suisse*, that over-exposed negatives should be intensified before fixation and during development. For this purpose development should be carred on till the fog just begins to appear, and the plate should then be well washed in running water, then immersed in a bath of

Mercuric chloride	5 Gm.,
Common salt	5 Gm.,
Potassium bromide	5 Gm.,
Water	100 C.c.,

till the image has completely disappeared. The plate should then be washed for at least half an hour in running water, and it is then ready for re-development and fixing. Dr. Reiss states that negatives thus intensified are very vigorous, and show a finer grain than those intensified after fixing.

Plate Backing.—The same writer refers to a novel and simple formula suggested by M. Hélain in the *Bulletin de la Société Française*. The special novelty consists in the employment of ammonium chloride instead of glycerin, to prevent the backing from becoming too dry and chipping off the plate. The two most efficacious backings are:—

1.	Lamp black	10-12 Gm.
	Yellow dextrin	100 Gm.
	Ammonium chloride	6 Gm.
	Water	90-100 C.c.

The lamp black should be damped with spirit, the dextrin added, and then the water, in which the salt has been dissolved previously.

2.	Croceine scarlet	10 Gm.
	Yellow dextrin	100 Gm.
	Ammonium chloride	6 Gm.
	Water	90-100 C.c.

The dye and the ammonium chloride should be dissolved in the water, and the dextrin then added.

REVIEWS AND NOTICES OF BOOKS.

'Chemistry for Photographers.' By Chas. F. Townsend, F.C.S., F.R.P.S. Pp. 158. Illustrated. Third Edition. Price 1s. net. London: Dawbarn and Ward, Limited. 1902.

This capital little book has been further revised for the present edition, and is vastly improved in so many ways that it appears quite worthy of an extended notice. In the introductory chapter the author does well to insist that learning "facts" in a more or less mechanical way is not learning chemistry, and he also reminds his readers that the proper place for a dictionary is on a shelf, not inside the human head. Proceeding, he emphasises the necessity, in all chemical and photographic work, of accuracy in weighing and measuring, after which he proceeds to treat of chemistry generally and the chemistry of the silver salts in particular, quite a variety of information being conveyed in this connection. Subsequent chapters deal with the chemistry of the photographic image, developers, reversal, reduction, and intensification, printing in silver, printing in salts of iron, printing in platinum, the bichromate printing processes, orthochromatism, impurities and substances that alter in the air, recovery of residues, cellulose, resins, varnishes, etc. In the brief space available it is, of course, impossible for the author to discuss any part of his subject at great length, but he has gone far to convert the diligent reader of his little book from a mere rule-of-thumb snap-shotter into a scientific photographer. The book is not yet free from defects in the text, but it is, nevertheless, strongly recommended to chemists in business, students preparing for the Major Examination, and photographers generally. A special feature of the work is its "cyclopædic" index, which conveys as much information as many books with much greater pretensions than this modest volume.

'Photographic Apparatus, Making and Adapting.'* By Fred. W. Cooper, D. W. Gawn, and Others. Edited by George E. Brown, F.I.C. Pp. 128, with 180 diagrams and working sketches. Price 1s. net. London: Dawbarn and Ward, Limited, 1902.

In this book the editor has collected a host of useful articles and practical notes, the writers of which explain how to make dark rooms, cameras, printing and enlarging apparatus, and miscellaneous attachments for the camera, the whole constituting a valuable addition to the library of the photographer who also happens to be a handy man. A preliminary section of the work is devoted to hints on tools and materials; instructions are then given for building a studio, and the construction of photographic apparatus generally is explained in the subsequent pages. The numerous diagrams and working sketches remove such difficulties as are inseparable from merely verbal descriptions, and chemists who are also photographic dealers should make a point of having this book at hand for reference.

'The Selection of Subject in Pictorial Photography.' By W. E. Tindall, R.B.A. Pp. 84. Illustrated. Price 3s. 6d. net. London: Iliffe and Sons, Limited. 1901.

The author of this uncommon work is of opinion that any apology required for its publication is to be found on the walls of the annual photographic exhibitions, and it is impossible to disagree with his assertion that many of the works exhibited would be considerably better if more attention were given to the subjects of point of view, the value of lines, the meaning of "tone values" and their reproduction by photography. He has made a bold attempt in this interesting and instructive volume to effect an improvement of photographic work in the directions referred to, and the reproductions of photographs taken by the author show that he is fully entitled to speak on the selection of subject, having practised much before preaching. He is well known as the secretary of the Yorkshire Union of Artists, and, although a painter, is also a photographer. His book deals entirely with the pictorial side of photography, and does so on lines which hitherto no writer has attempted. The work has been divided into the various classes of subjects which the photographer is likely to encounter, each occupying a chapter, and the difficulties peculiar to each particular class of subject are thus dealt with together, in a manner which is worthy of much praise.

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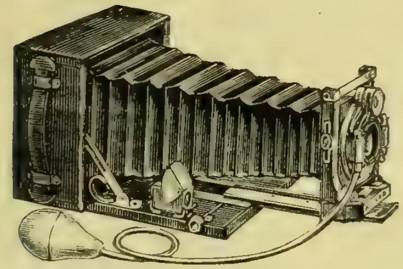

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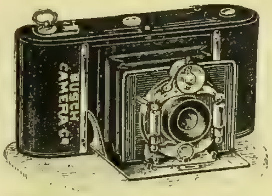

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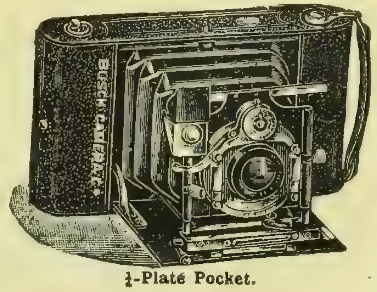

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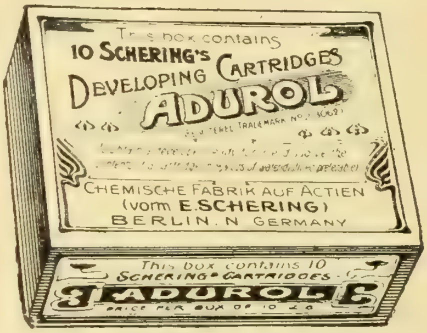

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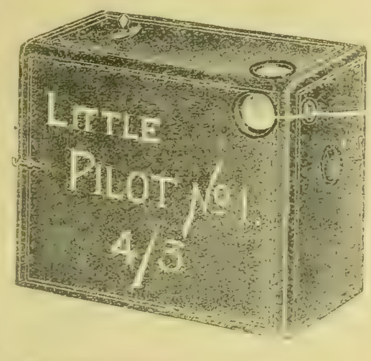
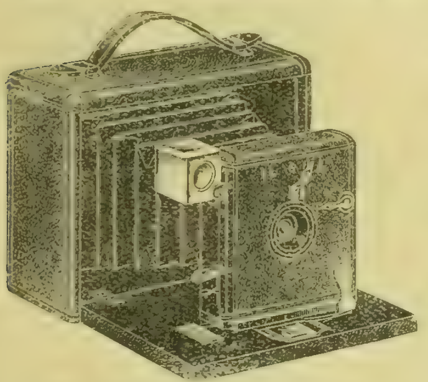


Butcher's 1902 Novelties.—Messrs. W. Butcher and Sons, the well-known photographic dealers, of Blackheath, have now established new premises at the corner of St. Bride Street and Stonecutter Street, E.C., with frontages on St. Bride Street, Stonecutter Street, and Farringdon Avenue. The Blackheath premises will still be carried on as before, but, owing partly to the numerous novel lines introduced by the firm, and also to the popularity of the "Primus" specialties, their business has increased to such an extent that the acquisition of new and extensive premises become a necessity. The firm has a great selection of hand cameras, and one of the latest introductions is a very popular line called the "Little Pilot" No. 1, which takes pictures 2 5/16 × $1\frac{3}{4}$, and retails at 4s. 3d. They are sent out to dealers in boxes containing half a dozen, with showcards, etc. The "Pilot" No. 2 takes pictures $3\frac{1}{2}$ × $2\frac{1}{2}$, price 5s.; "Pilot" No. 3 takes $\frac{1}{4}$-plate pictures, and "Pilot" No. 4 takes pictures 5 × 4. The sale of the "Little Nipper," which was introduced last year, has greatly increased, and up to the present time over 100,000 have been sold. "The Express" No. 1, price 8s., takes six plates $3\frac{1}{2}$ × $2\frac{1}{2}$; "The Express" No. 2, price 10s., takes six $\frac{1}{4}$ plates of twelve cut films; and No. 3 "Express" will take twelve $\frac{1}{4}$-plates or twenty-four cut films. "The Midg" is a very handsome camera, and takes twelve plates or twenty-four films, the No. 00 being fitted with magnifiers, and sells at 25s. The "Signet," price 21s., is fitted with Iris diaphragms. The very latest of this firm's cameras is the "Gipsy" guinea folding camera. It is very compact, with nickel plated fittings, achromatic view lens, revolving diaphragms, and metal slides, takes plates $4\frac{1}{4}$ × $3\frac{1}{4}$, and should have a big sale. Another novelty which should "take on" when it is put upon the market is the folding "Nipper" for roll films, to retail at 10s. 6d. This camera has a metal frame neatly covered, taking spools the size of "Brownie," and when closed will go into the waistcoat pocket. Every camera sent out by Messrs. Butcher is packed in white enamelled box, containing showcard and book of instructions for each. Of photographic outfits the firm has several new lines, including a new pattern 21s. quarter-plate outfit fitted with rack and pinion focussing, turntable in base of camera, and revolving metal shutter to lens; a 60s. quarter-plate outfit—an extremely compact extra long-focus camera—fitted with Bausch and Lomb shutter and R.R. lens, turntable in base of camera, and a three-fold rule-point tripod; also a 42s. quarter-plate outfit and a 70s. half-plate outfit. The new address of the firm is Camera House, St. Bride Street, London, E.C.



THE "GIPSY" (FOLDING CAMERA).

The "Crown" Camera, as its name implies, is sold at 5s. Unlike many other hand cameras sold at that figure, however, the "Crown" takes the popular $\frac{1}{4}$-plate; thus the trade, in supplying this camera, is not compelled to stock odd sizes of the various sundries required. Specimens of work produced with the "Crown" camera compare very favourably with that done by more expensive instruments, and the manufacturer guarantees that each camera is capable of producing work equal to any specimen used in the circulars and other advertising matter supplied. In addition to the camera, two view-finders, two double dark slides, two dry plates, chemicals, handbook of photography, and a weatherproof case are also included for the 5s. Particulars as to terms, etc., may be had of the manufacturer, Mr. Thomas P. Bethell, 115, Islington, Liverpool.

A 1s. $\frac{1}{4}$ Plate Hand Camera.—That a $\frac{1}{4}$ plate camera capable of producing "portraits and groups" could be manufactured and retailed, together with a dry plate, chemicals, and handbook of photography, for the sum of 1s., a few years ago would have been considered impossible. But Mr. T. P. Bethell, 115, Islington, Liverpool, has demonstrated that it is not only possible, but also practicable, for he has placed upon the market the "Monarch" magazine camera, which, with the articles mentioned, is sold at 1s. Another more expensive camera supplied by Mr. Bethell is the "Imprimis," at 2s. 6d., which he states is "simple enough for a beginner, good enough for an expert."

The "Hanover" Hand and Stand Cameras.—Messrs. Evans, Sons, and Co., 56, Hanover Street, Liverpool, have for many years done an extensive trade in photographic goods, and their "Hanover" cameras have established a reputation for excellence in many districts. Perhaps the most popular is the "Hanover" quarter-plate hand or stand camera, retailed at £4 4s. Much care and attention has been given to make this camera as perfect as possible and up-to-date in all details. The body, though covered with the best Morocco leather, is made throughout of mahogany. A focussing scale, marked accurately for each lens supplied with the camera, is at the right hand side, and is very useful for so-called snap-shot photography, or the camera may be fixed upon a tripod and the picture composed on the focussing screen; with this object in view a rising front with a clamp is fitted. The camera carries three double slides, which are of special form, making it most compact. The lens is a best quality Iris rapid rectilinear working at F/8, while the shutter is a behind lens roller blind pattern, with pneumatic and cord release, also loose lens panel. Exposures from 1/15th to 1/90th part of a second, or time exposures may be given. Two finders, with hoods to shade the sun rays, and protect the camera from dust when closed, are supplied. The No. 1 "Hanover" Outfit—price, quarter-plate, £3; half-plate, £4 4s.—is an excellent apparatus having all possible movements, of the best workmanship and finish, made of selected well-seasoned mahogany, highly polished. The No. 2 "Hanover" Outfit—price, half-plate, £6 15s.; whole plate, £9 10s.—is a high-class camera, combining the utmost lightness and portability with the essential qualities of rigidity and simplicity. The outfit consists of camera, three double dark slides, "Iris" R.R. lens, three-fold tripod, and waterproof case, and it may be strongly recommended as being the best possible value for the money.

"Le Pascal" is the name of the latest novelty in hand cameras. The camera is arranged to take daylight loading films in cartridge form. The film is automatically changed every time an exposure is made, entirely preventing any possibility of pictures being super-imposed, and the indicator records the number of exposures still available. The price is 13s. 6d. each subject, and should prove a good selling line for chemists. Messrs. F. Darton and Co., 142, St. John's Street, London, E.C., will be pleased to forward further particulars to any applicant on mentioning the *P.J.*

New Lines in Cameras.—Messrs. Barclay and Sons, Limited, 95, Farrington Street, London, E.C., have long held a foremost position among those houses supplying photographic goods, and from time to time they have introduced various novelties which have "caught on." This season they are bringing out a new guinea hand camera for twelve quarter-plates or twenty-four flat films, and a new 50s. hand camera for twelve quarter-plates, with fixed focus, R.R. lens, and portrait magnifiers. The No. 1 "Scout," a complete and efficient daylight-loading roll-

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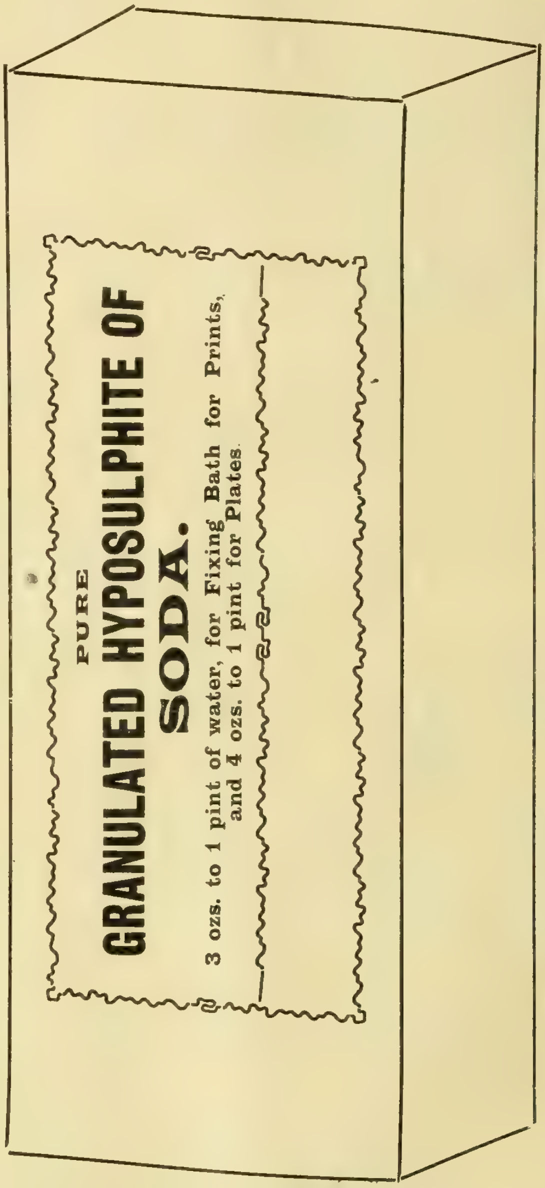
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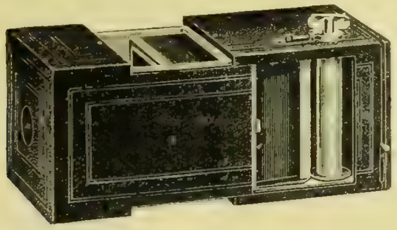
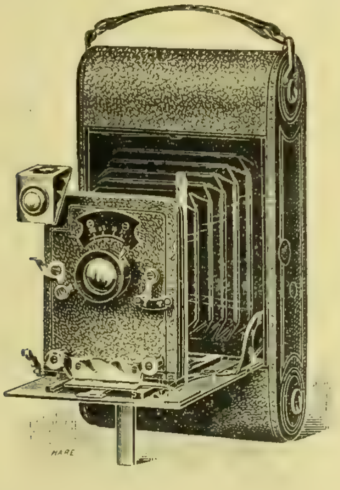
film camera, to retail at 5s., and the No. 3 "Ensign," a perfect folding camera, for quarter-plates or daylight-loading roll-films, at £3 12s. 6d., are also good lines; while in tripods Messrs. Barclay have a very light, rigid, tripod for hand cameras at 2s. 6d. Particulars of these and various other novelties will be sent to any applicant on mentioning the *P.J.*

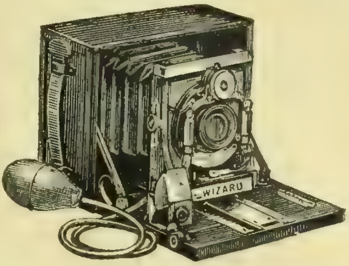
Archer's Hand Cameras.—Messrs. Archer and Sons, manufacturing opticians, 73, Lord Street, Liverpool, have an extensive list of cameras ranging in price from 5s. to £10, but perhaps their best-known cameras are the "Archer-Express" magazine hand camera (prices one to four guineas) and Archer's "Tourist" hand camera (price £5). The latter is beautifully made throughout, having leather bellows worked by rack and pinion from the outside, with engraved scale of distances, rising front, door at back for focussing when used on a stand, two finders, Thornton-Pickard shutter, spirit level, R.R. lens, with improved Iris diaphragm and three best double dark slides.

New Daylight Loading Roll Film Cameras.—Messrs. Geo. Houghton and Son, 88-89, High Holborn, W.C., send particulars of two new daylight loading roll film hand cameras, the "No. 1 Scout" and the "No. 3 Ensign." The former is a beautiful little camera, sold at 5s., and is constructed of seasoned wood, covered externally with a fine grain material of good appearance. It is fitted with a rapid lens of excellent quality, and an everset shutter giving either time or instantaneous exposures. The camera is loaded with the greatest ease, and carries a lightproof roll of film making six pictures 2¼ × 2¼. All the outside fittings are nickel plated, and a ground-glass view finder is provided for 9d. extra. The "No. 3 Ensign" is a more expensive camera of the folding type—£3 12s. 6d.—compact and convenient in form, combining portability and lightness with the advantage of loading and unloading in daylight. It has a falling baseboard and extending front, and can be opened or closed with the greatest ease and rapidity. The novel feature of the instrument, however, is a plate attachment, with focussing screen and slides, which can be fitted to the back, permitting the use of glass plates, thus enabling the possessor to use either plates or films, as desired. The camera has a rapid rectilinear lens, with iris diaphragms, everset "time or instantaneous" shutter working between the lenses, reversible finder, and focussing scale. Though taking pictures 4¼×3¼, the camera measures, when closed, only 8×4½×1¾, and can be easily carried in the pocket or by the handle provided.





"Wizard" Cameras.—Messrs. Seabrook, Bros., and Co., 21, Edmund Place, Aldersgate Street, E.C., referring to the "Cycle 'Wizard' A," Nos. 89 and 77, remark that this is the cheapest and most popular "Wizard" for beginners and, furnished with their extra quality single lens, is without an equal in achromatic lenses. This camera is made exactly like the Cycle A1, the only difference being that it is supplied with a single lens instead of a rapid rectilinear. Prices:—"Cycle 'Wizard' A," No. 89, 1 double dark slide and finest solid leather case, ¼-plate, £2 2s.; "Cycle 'Wizard' A," No. 77, 3 slides and leather case, £2 12s. 6d. The "Cycle 'Wizard' A1," Nos. 90 and 92, is said to give universal satisfaction, and, considering the quality of the lenses and general finish, is claimed to be better value than anything on the market at the prices quoted. The specifications are as follows:—Polished mahogany box, substantial seal grain covering, fine red leather bellows, finely-nickelled fittings, except shutter, new improved reversible finder with nickel hood, rising and falling front, the new "Wizard" shutter, for instantaneous (1/5 to 1/100 second) and bulb and time exposures; finest quality rapid rectilinear lens; fine leather velvet-lined case, two tripod plates for reversing camera for horizontal and vertical views. Prices:—"Cycle 'Wizard' A1," No. 90, ¼-plate, with 1 slide and fine leather case, £2 12s. 6d.; No. 92, 3 slides and leather case, £3 3s. Extra slides: ¼-plate, 3s. 6d.; 5 × 4, 4s. 6d. The "Cycle 'Wizard' B Sr.," long focus, Nos. 91 and 93, shown in the illustration, is a most useful camera, containing many advantages not hitherto placed in a camera of such small dimensions, and is unique in its long extension of bellows. The camera is made of selected polished mahogany, with finest seal grain covering, having special double extension bellows, so that back or front lens can be used alone as a single lens, giving double the size picture of the double combination; finely nickelled and hand-polished fittings, new improved reversible finder with nickel hood; rising, falling, and sliding front; new improved rack and pinion with double track for delicate focussing, two tripod plates for reversing picture, New "Wizard" Sr. Shutter, from 1 second to 1/1000th second, also for bulb and time exposure; special extra rapid rectilinear lens, of which one or other combination can be used as a single lens at long focus; light and strong double dark slides, fine leather velvet-lined case, with long shoulder straps. Prices:—"Cycle 'Wizard' B Sr., long focus, No. 91, ¼-plate, slide and leather case, 63s.; No. 93, 3 slides and leather case, 5 × 4, 75s. Extra slides: ¼-plate, 3s. 6d.; 5 × 4, 4s. 6d. This camera can be fitted with the new "Wizard" Rapid Orthoscope lens at F/6.



The "Bullard" Hand Camera.—The great feature about the "Bullard" camera is the plate-changing mechanism. The camera is of the American type, with every modern convenience essential to the high-class hand camera. But the chief point is that while taking eighteen 4 × 5 glass plates or cut films at one loading, it is the most simple and easiest changing magazine camera imaginable, and, moreover, its bulk is very little more than that of a good many ¼-plate cameras, the case measuring 6 × 6⅝ × 7¾ inches. The camera is made in three varieites—Series 2 A, price 95s.; Series A, price 80s.; and Series B, price 47s. 6d. Further particulars concerning this camera, which has attracted considerable attention may be had of Messrs. A. E. Staley and Co., 35, Aldermanbury, London, E.C., who also supply the celebrated Ray cameras.

Weno Film Cameras.—These new folding pocket film cameras for daylight cartridges are perhaps the latest and lightest models introduced, being very light and convenient to use; a great point is that they are fitted with Bausch and

PACKED FOR RETAIL

PHOTOGRAPHIC CHEMICALS & DEVELOPERS

EXAMPLES.

		Retail Prices. Each.	Trade Prices. Per doz.
Developing Cartons, for Plates	"Three Spires Brand"	4½d.	3/-
,, ,, ,, Papers	,, ,, ,,	4½d.	3/-
Toning Carton, Gold	,, ,, ,,	4½d.	3/-
,, ,, Platinum	,, ,, ,,	4½d.	3/-
,, ,, Combined Toning and Fixing	,, ,, ,,	4½d.	3/-
Fixing Cartons	,, ,, ,,	1½d.	1/-
"Photopel,"—The Original Photographic Pellet	,, ,, ,,	1/-	8/-
Photographic Pellet Developers (complete Cartons)	,, ,, ,,	10d.	7/6
Pyrogallic Acid	,, ,, ,,	,,	,,
Hydroquinone (Quinol)	,, ,, ,,	,,	,,
Amidol	,, ,, ,,	,,	,,
Metol	,, ,, ,,	,,	,,
Ortol	,, ,, ,,	,,	,,
Glycin	,, ,, ,,	,,	,,
Paramidophenol	,, ,, ,,	,,	,,
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Potassium Oxalate Cartons	,, ,, ,,	4½d.	3/-
Sulphate of Iron and Acid Cartons	,, ,, ,,	2d.	1/-
Developing Salts for "Platona"	,, ,, ,,	4d.	2/6
Uranium Aceto-Nitrate	,, ,, ,,	4½d.	3/-

Full descriptive circular on application.

WYLEYS LIMITED, COVENTRY.

LONDON ADDRESS:
38, WILSON STREET, FINSBURY, E.C.

CORONATION YEAR.

SWIFT AS LIGHT
CADETT
TRADE MARK.

THE

ROYAL

(Photographic) PLATE

ONLY IN SIZES	3¼ × 3¼	4¼ × 3¼	5 × 4	6½ × 4¾	and 9 × 12cm.
PER DOZ.	1/-	1/-	1/7	2/3	1/3

On THIN GLASS and in the usual mode of packing and boxing. Carries a SPECIAL DISCOUNT.

BEST QUALITY ONLY.

WRITE FOR FULL PARTICULARS OF ALL OUR SPECIALITIES AND TERMS

Advertising Matter, Price Lists, Booklets, Pamphlets, Show Cards, &c., post free on application.

CADETT & NEALL, LTD., ASHTEAD, SURREY

Lomb's time and instantaneous shutters, with various speeds and pneumatic release, R.R. lenses, brilliant reversible view-finders and focussing scale. The cameras will take any films wound on standard spools. Price:—3¼ × 4¼, with Gem automatic shutter, £3 3s.; 5 × 4, with Unicum shutter, £4 14s. 6d. Messrs. A. E. Staley and Co., 35, Aldermanbury, London, E.C., will be pleased to supply further particulars.

PHOTOGRAPHIC SUNDRIES.

Address Tablets and Labels.—The Endolithic Manufacturing Co., 61½, Fore Street, E.C., supplies address labels in brass, copper, white metal, etc., with lettering either engraved or in relief, in addition to their well-known endolithic ivory and bone labels.

Photographic Mounts.—Mr. Edward Peck, wholesale photographic chemist, East Dereham, Norfolk, will be pleased to send to any chemist, post free, a set of samples of photographic mounts on receipt of application mentioning the *P.J.* Mr. Peck has an extensive stock of all kinds of mounts, and is in a position to despatch goods same day as order is received.

Dark Room Lamps.—Messrs. Reynolds and Branson, Ltd., 14, Commercial Street, Leeds, are the makers of the "Rystos" dark room lamps, which are made to suit gas or electricity. They have a patent ventilating and cooling exhaust cone for burner and lantern; also a special stopcock or switch to change non-actinic to white light, or turn all down to non-luminosity. They are made in three sizes, at prices ranging from 10s. 6d. to 25s.

The "Royal" Photographic Plate.—Being Coronation year, Messrs. Cadett and Neall, Limited, Ashtead, Surrey, have introduced the "Royal" photographic plate in five sizes, on thin glass and in the usual mode of packing and boxing. These plates are of excellent quality, and carry a special discount. Particulars concerning these and other specialties will be forwarded to any chemist on application being made at the above address mentioning the *P.J.*

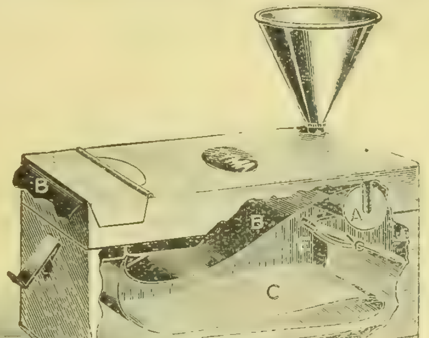
Photographic Sundries.—Messrs. Evans, Sons, and Co., 56, Hanover Street, Liverpool, in addition to their well-known lines in photographic supdries, are this season stocking several new lines in albums, daylight enlarging cameras, developing dishes, Wellington films, focussing glassonite screens, lamps, supplementary lenses, mounts, printing frames, 1s. retouching sets, and squeegees. The firm, of course, also hold a large and well-assorted stock of general photographic goods.

Photographic Enlargements.—Messrs. Myers and Frost, 42, Oxford Street, Manchester, as perhaps the oldest enlarging firm in this country, and are now carrying on business as The Manchester Photo-Enlarging Company, having been established nearly forty years. During recent years the business extended so much that additional premises had to be built, and in fitting up these premises every appliance that modern knowledge could suggest to adapt them to the needs of photography and photographic enlarging were procured. The firm work exclusively for the trade, therefore in applying for price list, business card should be enclosed.

Photographic Albums. The season for the hand camera tourist is just commencing, and, as he usually likes to keep the photos taken tidy, every enterprising dealer should lay himself out to meet the demand. With that object, attention is directed to the amateur photographic albums of Messrs. Ferd. Anthony Horle and Co., 8, St. John's Lane, E.C. These books are not only notable for their cheapness, but more particularly for their choice designs and finish. Messrs. F. A. Horle supply the dealer with an illustrated price list, off which they give a liberal discount, so that the dealer can use the same price list for his own customer, thus saving the expense of having price lists printed, and, furthermore, they keep an enormous London stock, so that goods can be supplied at a moment's notice. Their series include books to slip in Brownie, pocket Kodak, folding pocket Kodak, Little Nipper, etc., pictures. They are also doing largely in albums similar to the Sunny Memory albums. In parchment envelopes they have three splendid novelties, viz., Moire, Butterfly, and Aurentum, besides the ordinary parchment photo envelopes. Photographic dealers will do well to write for prices.

Chemists and their Relation to Photography.—Messrs. Francis Newbery and Sons, 27 and 28, Charterhouse Square, London, E.C., in a communication with the foregoing heading, refer to the fact that spring has arrived, and with it the time when the photographer, be he amateur or professional, begins to overhaul his camera and its belongings to see if they are in proper condition—and to procure new supplies. The present, therefore, is the most important time of the year to photographic dealers, and more particularly to the chemist who up to now has not "planted" a photographic "branch," and the vital necessity of deciding now to take the needful step cannot be too strongly urged. Messrs. Newbery state that a year ago they were the means of persuading several customers to commence the sale of photographics, on a tentative scale only, and those customers have since expressed their pleasure at the success they have achieved in the new departure. The year of Coronation should certainly be a crowning success to the photographic trade, and the chemist who is thinking of opening a photographic branch may never have a better opportunity. Messrs. Newbery and Sons will be pleased to send, by return of post, to any chemist, a reprint of a short article relating to this subject, and a copy of their new photo-catalogue as soon as it is ready, on application being made with a reference to the *P.J.*

The "Tyma" Developing Trough.—Messrs. Geo. Houghton and Son, 88-89, High Holborn, W.C., are introducing an ingenious apparatus for developing and fixing rollable films, which should do much to increase the popularity of rollable films, inasmuch as by its means all necessity for a dark-room is avoided. Given the correct exposure, which with the aid of a meter should be a simple matter, all that is required with the "Tyma" is a 20 oz. bottle of developer, a 20 oz. bottle of fixing solution, a good supply of clean water, and a watch or clock; for, as the name suggests, the development is regulated by time, the film being in total darkness during the entire process. The method of procedure will be readily understood on referring to the illustration. To insert the exposed spool, the lid is taken off and the spool is placed in the spring holders (A), so that when unwound the black paper is nearest the lid; then the end of the black paper is passed through the slot to the outside of lid (B) and pulled until the end of film appears; this is attached to a spring clip (E), and the lid is replaced, a little water, however, having first been poured into the trough. The paper is then gently pulled through the slot until



An Exhibition of Pictorial Photographs, by Mr. C. Yarnall Abbott, of Philadelphia, will be opened at the house of the Royal Photographic Society, 66, Russell Square, London, W.C., on March 25, and an introductory address from his pen will be read. The exhibition will remain open daily for six or seven weeks

This is the House for Photographic Goods of all kinds and of all Makers (bar one).

Barclay & Sons, Ltd.

95, FARRINGDON STREET,
LONDON, E.C.

New Lines in Cameras.

LIBERAL TRADE DISCOUNTS.

5/-	No. 1.—"**SCOUT.**" A complete and efficient Daylight-loading Roll-film Camera.
21/-	**HAND CAMERA**, for 12 Quarter Plates, or 24 Flat Films. (Specially made for us in London.)
50/-	**HAND CAMERA,** for 12 Quarter Plates, with fixed Focus R.R. Lens and Portrait Magnifiers. (Specially made for us in London.)
72/6	No. 3.—"**ENSIGN,**" for Quarter Plates or Daylight-loading Roll-film. A Perfect Folding Pocket Camera.
2/6	**TRIPODS** for Hand Cameras. Very light; remarkably rigid.

Various other Novelties in preparation, Lists of which will be sent when complete.

BARCLAY & SONS, Limited

95, FARRINGDON ST., LONDON, E.C.

the second white figure appears, which indicates that a layer of the film is at the bottom of the trough. This is allowed to remain about a minute before pulling more through, so that the film may soak, thus preventing it from adhering to the next layer. When sufficient time has elapsed for the film to soak the pulling is continued gently till just after figure "1" appears, when a slight resistance is felt; a little harder pull is then given, and the black paper, the end of the film, and the tissue paper holding the film and paper together is jammed tightly into the slot and held there, the position of the film being as shown in the illustration (C). The water is then syphoned off through the outlet (D), and the processes of development, fixing, and washing can be completed without removing the lid. Particulars of this apparatus may be obtained from Messrs. Houghton and Son.

PHOTOGRAPHIC CHEMICALS.

The "Three Spires" Brand Photographic Chemicals.—Messrs. Wyleys, Limited, manufacturing chemists, Coventry, who claim that their "Photopel," patented in 1889, was the first compound photographic pellet put on the market, have devoted much attention to the production of pure photographic chemicals, and to packing them in a form convenient for handling by the retailer. Consequently, there is a considerable demand for their "Three Spires' brand cartons and bottles of chemicals for developing, toning, and fixing, etc., hence those photographic dealers who have not yet taken up this brand will do well to apply for particulars.

Developers and Solutions.—Mr. J. E. Lockyer, chemist, 87, Evelyn Street, Deptford, S.E., the maker of the well-known "Hydroquinone" and other developers and solutions, has for some time past made a specialty of ready put-up developers and solutions with customer's own name and address printed on the carton. There are so many different kinds of solutions required by amateurs that it does not always pay a chemist to put them up himself; he is apt to consider the cost of the solution and forget the amount of capital invested in bottles, corks, cartons, labels, etc., besides the labour entailed. Hence he will probably find that a clear 33⅓ per cent. profit on ready put-up solutions pays better. Mr. Lockyer also supplies chemicals in small bottles, ready for sale, granular hypo soda in cartons, etc. Write for price list and full particulars.

Powell's Compressed Developers and Toning Baths.—Mr. T. H. Powell, M.P.S., pharmaceutical chemist, 116, Denmark Hill, London, S.E., like many other chemists, has turned his training in the laboratory to business account. His attention has been directed more particularly to the preparation of compressed photographic developers, and with considerable success. Powell's "Pyro Developoids" were first introduced in 1889, and since that time Mr. Powell has made many valuable additions to his series of compressed preparations. Not the least important is the pyro and soda developer, which is admirably adapted for all short exposures, and may be used for several consecutive plates. Another important addition is the compressed metol and hydrokinone developer in 1s. boxes. Powell's developers and toning baths are put up in the smallest compass compatible with practical utility, and are invaluable to travellers whether by sea or land. They are equally useful in the dark-room, superseding bulky solutions, and being in a dry condition they neither spoil nor decompose.

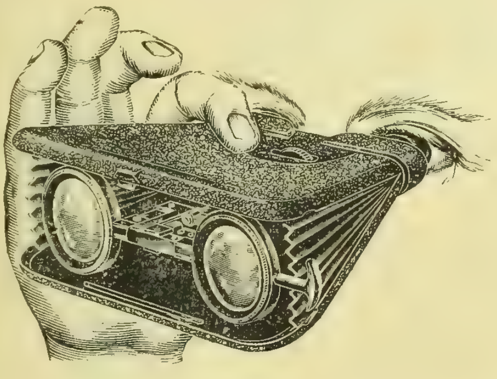
"Syntol."—The Vickers Neale Trading Co., 30, Guildford Road, Greenwich, S.E., send particulars of the latest introduction in photographic developers—"Syntol"—which takes the form of a fine powder of the hydrokinon class. There are, however, several advantages claimed for this new developer; in the first place, when dissolved in water, no preservative is required, and the solution is said to keep indefinitely, either singly or mixed with the carbonate accelerator as a single solution developer. It produces negatives of a quick printing, platinum grey, and very beautiful effects are produced on both bromide papers, opals and lantern plates. No bromide is necessary with this developer, either with plates or papers. Even with over-exposed plates, the action of the developer is claimed to be under perfect control, and very few plates are "lost" when "Syntol" is the developing agent, though they may be manipulated by inexperienced persons or amateur photographers. It sells at 8d. and 1s. 3d., is packed in attractive glass tubes, the contents of the smaller tube sufficing for the development of half a gross of quarter-plates. It is prepared only by the above-mentioned firm.

Schering's Cartridge Developers.—Messrs. A. and M. Zimmermann, 9 and 10, St. Mary-at-Hill, London, E.C., send samples of Schering's Cartridge Developers—adurol, pyro, and hydroquinone. The cartridges consist of cylindrical tubes, containing the developing agent, separated from the alkali by a small piece of cotton wool and a wooden plug. For use, the contents of a cartridge are dissolved in 4½ oz. of water, the resulting solution being as efficient as freshly prepared developers made according to the best formulæ. The cartridge developers, on account of their compactness, easy handling, and ready solubility of contents, are specially suitable for travelling photographers and amateurs. They are sent out in boxes of 10, the pyro and hydroquinone being retailed at 2s. 3d. and the adurol at 2s. 6d. per box.

OPTICAL NOTES.

Optical Amalgamation.—An important change has occurred in the optical trade through the amalgamation of Messrs. J. Raphael and Co., 51, Clerkenwell Road, London, and Messrs. Wheway, Son, and Redfern, of Birmingham. The latter firm, established in 1823, is well-known throughout the wholesale trade for their English gold and steel spectacle and eyeglass frames. The combination, which will be known in future as Raphael, Wheway, and Redfern, Limited, has been brought about through the constantly increasing demand for English manufactured spectacle and eyeglass frames, which chemist-opticians cultivating the better class trade invariably specify, and for which the limited manufacturing space at the Clerkenwell premises was unequal. The central offices of the newly-constituted firm are at 51, Clerkenwell Road, London, and will continue to be under the direct management of Mr. J. Raphael. The gold and steel goods will be manufactured at the factories in Vyse Street, Birmingham, whilst the lenses will be ground and finished at the Dudley Road works. These factories will be under the superintendence of Mr. F. H. Wheway. Prescription work will be executed at either London or Birmingham, to suit the convenience of customers. Extensive alterations and enlargements of both premises are to be commenced immediately, in order to give greater facilities for the prompt despatch of orders.

A Handy Opera Glass.—Messrs. F. Darton and Co., of 142, St. John's Street, London, E.C., offer a very compact pocket opera-glass, which, when closed, is perfectly flat, and occupies no more space than a card-case, and can easily be carried in the dress coat or vest pocket. It is neatly covered with fine grain leather and opens by a spring snap at the bottom, and, by a single turn of a small handle at side, the object glasses are placed in position. It has good definition, and is called "La Mignonne." The wholesale price is 21s. net.



THE "ARCHER-EXPRESS" MAGAZINE HAND CAMERA.

Latest Improvements. Best Workmanship. Made of Seasoned Mahogany. Covered with best Morocco Leather.

Prices—21/-, 25/-, 35/-, 42/-, 50/- & 84/-. Send for Price List with full description, and Testimonials.

The Original and Genuine Express can only be had from ARCHER & SONS.

☛ List of 20 different Cameras from 5s. to £10. 120 pages, post free, 1½d. All requisites.

ARCHER'S

"TOURIST" HAND CAMERA.

Recommended by the Editors of this and other Photographic Papers.

(1) It has a leather bellows worked by rack and pinion from the outside, with engraved scale of distances; (2) rising front; (3) door at back for focussing when used on a stand; (4) two finders; (5) Thornton-Pickard shutter; (6) spirit-level. First-class Rapid Rectilinear Lens fitted with improved Iris Diaphragm. Beautifully made throughout. **Price £5.** *Complete as above with 3 best Double Dark Slides.*

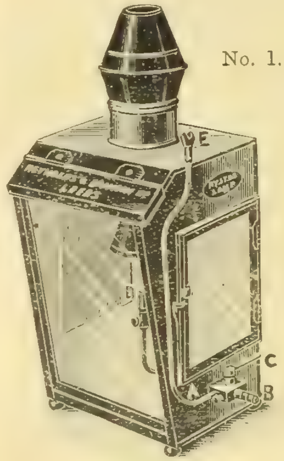
ARCHER & SONS, MANUFACTURING OPTICIANS, **73, LORD STREET, LIVERPOOL.**

Established 1848. Trade Terms on receipt of card. Telegrams, "Optic, Liverpool." Telephone, 5615.

REYNOLDS & BRANSON Ltd.

THE "RYSTOS" DARK ROOM LAMPS.

These Lamps are made to suit Gas or Electricity, and are a boon to Amateur or Professional Photographers or Radiographers.



No. 1.

They have a Patent Ventilating and Cooling Exhaust Cone for burner and lantern; also a special Stopcock or Switch to change non-actinic to white light, or turn all down to non-luminosity.

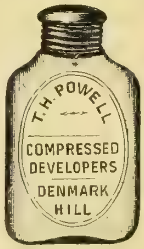
MADE IN THREE SIZES.

PRICES.

No. 1 Lamp, $11\frac{1}{2}$ ins. high × $7\frac{3}{4}$ ins. wide ..	**15/-**
Ditto, for Electricity ..	**25/-**
Safe Light for Spectrum Plates, extra **6/-**	
No. 2 Lamp, $12\frac{1}{2}$ ins. high × $8\frac{1}{2}$ ins. wide ..	**20/-**
No. 3 Lamp, $8\frac{1}{4}$ ins. high × $5\frac{3}{4}$ ins. wide ..	**10/6**
Safe Light for Spectrum Plates, extra **4/6.**	

LIBERAL TERMS TO DEALERS.

14, COMMERCIAL ST., LEEDS



T. H. POWELL'S

Compressed Developers and Toning Baths

(Dating from 1889),

Should be in every Dark Room, and are invaluable for Travellers, being Compact, Soluble and Reliable, and give the finest possible results.

May be obtained through all the usual houses.

T. H. POWELL, Photographic Chemist,

116, DENMARK HILL, LONDON, S.E.

THE "CROWN" CAMERA

Takes ¼-PLATES.

Patent No. 2965.

CAMERAS FOR BEGINNERS.

Cheap but Reliable, every Camera Guaranteed.

'IMPRIMIS' CAMERA,

Takes ¼-Plates, **2/6** each.

'CROWN' CAMERA

Price, **5/-** each.

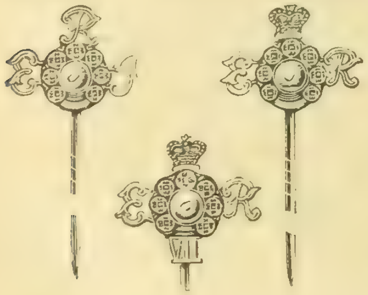
Write for full particulars,

THOS. P. BETHELL,

Patentee & Sole Manufacturer

69a, Pembroke Place,

LIVERPOOL.



CORONATION ELECTRIC SCARF PINS

PINS ONLY, with fibre back and hooks for easy attachment of lamp and wire,	each	**2/6**
PINS COMPLETE, with special quality English-made lamp, wire and pressel or switch	each	**5/6**
PIN SET. Pin complete, with 4-volt pocket dry battery, ready for use ..	per set	**8/6**
PIN SET. Pin complete, with 4-volt pocket accumulator, uncharged ..	per set	**9/-**

LIBERAL TERMS TO DEALERS.

ARCHIBALD J. WRIGHT, ISLINGTON ELECTRICAL WORKS, **318, Upper St., London, N.**

Send for large Illustrated List of Electrical Novelties, including descriptive circular of above Pins.

The New "Orthoscope" Lenses.—Messrs. Seabrook, Brothers, and Co., 21, Edmund Place, Aldersgate Street, E.C., claim that their convertible "Orthoscope" lens, F/6, to fit Unicum or Wizard Sr. Shutters, exemplifies the very highest type of rectilinear lens which can be made, combining a speed far greater than that found in the ordinary rectilinear lens, and at the same time all the excellent qualities which render the rectilinear lens so universally applicable to almost all the amateur's requirements. The speed of F/6 which is embodied in this lens construction makes it possible to get pictures which formerly could not be had with any lens except of the expensive anastigmatic type. The "Orthoscope" is especially adapted to the production of portraits with the large openings, it having been possible, by a peculiar combination of the famous Jena glass, to evolve a construction in which the distinctive properties of the portrait lens are combined. No expense is considered in either the labour or materials which enter into the manufacture of this objective to produce an article which is absolute perfection. Moreover, the makers claim to have produced in the "Orthoscope" a lens which, as its title indicates, is truly a convertible objective. The two combinations are of different focal lengths, the back combination being the shorter. Either the back or front combination may be used alone, the latter in this case being screwed into the back of the shutter. The relative focal lengths of these two combinations, used singly and as a double combination, are given below, as also the relative magnifications and speeds obtainable with the diaphragm opening of the 4 × 5 Unicum Shutter. The advantages of this feature cannot fail to appeal to the well-informed amateur, and those who contemplate the purchase of a first-class lens at a moderate price should give this lens a trial before purchasing.

	Focus. ¼-plate.	Size. 5 by 4	Speed. ¼-plate.	Size. 5 by 4	Magnification. ¼-plate.	Size. 5 by 4.
With double combination..	4 3/4in.	6in.	F 6	F 6	1in.	1in.
With back combination....	7 3/8in.	8 3/4in	F 9	F 10	1½in.	1½in.
With front combination ..	11in.	14in.	F 13	F 16	2 1/5in.	2 1/3in

Prices (in cases in fine cells ready to screw on to the shutter);—Quarter-plate, 27s. 6d.; 5 by 4 size, 35s.

PHOTOGRAPHIC PRICE LISTS.

Several Price Lists issued annually by leading photographic houses are not yet out of the press, and of these may be mentioned Messrs. Geo. Houghton and Son, 88-89, High Holborn, W.C.; Messrs. Ross, Limited, 111, New Bond Street, W., and Evans, Sons, and Co., Hanover Street, Liverpool, whose catalogues may be looked upon almost as standard works of reference for cameras, photographic sundries, lenses, etc.

Chemicals for Photography.—Messrs. Harrington Bros., 4, Oliver's Yard, City Road, E.C., have for many years made a specialty of preparing chemicals for photographic and photomechanical processes, and their wholesale price list of such chemicals is one of the most convenient, of its kind, issued. A special feature is the list of packed and bottled goods with either plain labels or with the photographic dealer's name, and Messrs. Harrington also make up developing and other solutions, in accordance with the dealer's own formulæ, in suitable bottles with appropriate labels. Those who do not possess a copy of this list should write for one, as it is extremely useful for reference.

Takyr and Tykta Cameras.—The new price list for the season 1902 of Takyr and Tykta hand cameras—which are fitted with Krauss-Zeiss lenses, Unar, Protar, etc., and with latest construction focal plane shutter, giving exposures up to 1/1000th second—is a neat little production of eight pages. These cameras are manufactured by E. Krauss, 21, 23, Rue Albouy, Paris, who claims that they are the best and most accurately made cameras produced. They are of the folding type, and those who desire a high-class camera should write for a copy of this price list to Messrs. A. E. Staley and Co., 35, Aldermanbury, London, E.C.

Photographic Lenses.—Messrs. A. E. Staley and Co., 35, Aldermanbury, London, E.C., in their latest trade price list, direct attention to several important improvements, additions, and reductions. For their London-made lenses and the "Special" series of guaranteed lenses they have adopted the standard size flanges with Whitworth threads or screw, as proposed by the Photographic Society. Attention is also directed to their London-made lenses for hand cameras, which they are prepared to mount in any style to suit the construction of camera, and to the Plastigmat Anastigmat lenses made by Bausch and Lomb, of whose goods the firm are the proprietors in Great Britain. Chemists dealing in photographic goods who have occasion to get repairs executed should apply to Messrs. Staley and Co. for particulars concerning that branch of their work; also for particulars and prices of their lenses.

Busch Photographic Lenses.—Mr. Henry F. Purser, 31, Hatton Garden, E.C., the wholesale agent of the Rathenow Optical Manufacturing Co. (late Emil Busch), sends a copy of the company's English retail price list for 1902. Several additions and alterations have been made in the list which it is hoped will enable the firm to supply the requirements of the photographer in an even more satisfactory manner than hitherto. Among the new series may be mentioned the Triachromat and the Aplanat sets of lenses, with and without shutters; and the addition of R.P.S. Standard Thread Flange to nearly all the series is a great advantage, securing the interchangeability of many lenses on the same flange. Special attention is directed to the three series of rapid, portrait, and detective "Aplanats," which are claimed to be unsurpassed by any other lenses of the kind on the market, even at a higher price.

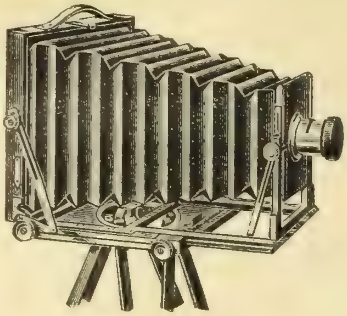
Tribees' Cameras.—The Busch Camera Co., 31, Hatton Garden, E.C., is issuing a small list of hand and stand cameras for plates and films, fitted with Busch lenses. The list includes particulars of The Pocket Film Camera for daylight loading spools, 3¼ × 2½ (twelve exposures), price £4 15s.; The Tribees' Magazine Camera for glass plates, 4¼ × 3¼, price £6 10s.; The Tribees' Field Cameras, price, half-plate £5 17s. 6d., whole plate £9; The "Cycam" Cartridge Film Camera, constructed to take daylight loading films, size 5 × 4, price £6 10s.; The "Meda," claimed to be the most perfect of all combination hand and stand cameras, for plates 4¼ × 3¼, price £8 17s. 6d.; The Tribees' Swing Folding Camera, for 5 × 4 plates, £6 10s.; The Quarter-Plate Pocket Camera for daylight loading films (twelve exposures), price £5 15s.; and The Long Extension Folding Camera, which can be had with various Busch lenses and sets, including the Unicum shutter, at prices ranging from £7 17s. 6d. to £10 15s. The Quarter-Plate Pocket Camera is of a new pattern folding type, having all the movements and advantages usually contained only in bulky cameras, including a rising and sliding front. The great feature about the "Meda" is that, in addition to possessing every movement necessary for any class of work, by one simple movement it is converted into the equal of a stand camera, a glass screen coming forward into position ready for focussing.

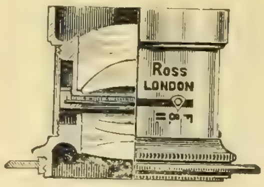
CONVERSION OF IMPERIAL TO METRIC MEASURES.

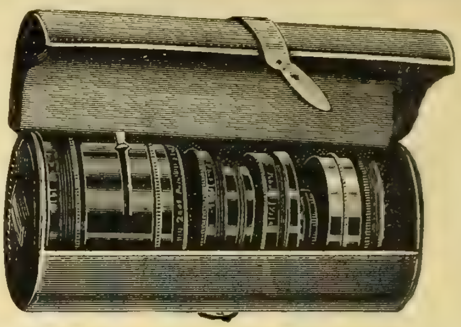
Minims, Drachms and Fl. Ounces to Millilitres; Pints to Litres

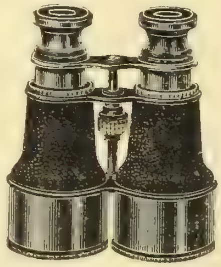
	Minims to Ml.	Drachms to Ml.	Ounces to Ml.	Pints to Litres.
1	0·05916	3·552	28·412	0·568
2	0·11832	7·103	56·825	1·136
3	0·17748	10·655	85·237	1·705
4	0·23664	14·206	113·649	2·273
5	0·29580	17·758	142·065	2·841
6	0·35496	21·309	170·474	3·409
7 ...	0·41412	24·860	198·886	3·977
8	0·47328	28·412	227·298	4·545
9	0·53244	31·961	255·761	5·111

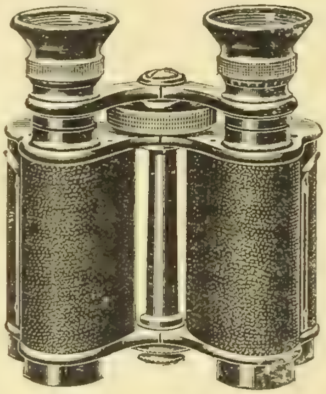
Explanation of Table.—The first column represents the number of minims, drachms, fluid ounces or pints. Thus: 4 minims = 0·23664 Ml.; 4 drachms = 14·206 Ml.; 4 fl. oz. = 113·649 Ml.; 4 pts. = 2·273 Litres.











Grand Prix and Gold Medal, Paris, 1900.

ROSS, Ltd. MANUFACTURING - - - OPTICIANS.

Catalogue No. 1

CONTAINS FULL PARTICULARS OF

ROSS' Portrait and View Lenses for Amateur and Professional Photographers. New Series Symmetric Anastigmats.
ROSS-ZEISS' Anastigmats, including the Convertible Anastigmats and New Planar and Unar Lenses.
ROSS-GOERZ' Double Anastigmats.
ROSS' Field and Studio Cameras and Accessories.
ROSS' Process Camera and Reversing Prisms and Mirrors, &c.
ROSS' Science, Projection, and Enlarging Lanterns.

And several important new series of

LENSES, CAMERAS, LANTERNS, ETC., ETC.

Catalogue No. 2

CONTAINS ILLUSTRATIONS AND PRICES OF

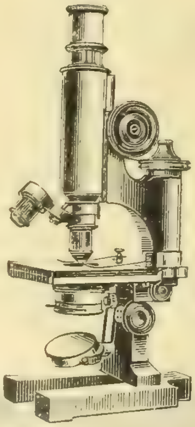
ROSS' Microscopes, Objectives, and Micro-Apparatus.
ROSS' Telescopes for Sportsmen and Naval and Military Officers.
ROSS' New Series Binocular Glasses and Stereo Telescopes.
ROSS' New Series Opera Glasses.
ROSS' Mercurial and Aneroid Barometers, Thermometers, &c.
ROSS' Sextants, Compasses, Pedometers.
ROSS' Surveying and Drawing Instruments.
ROSS' Spectacles and Eyeglasses, &c.

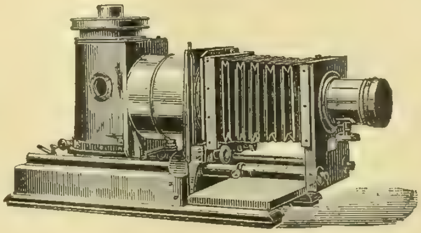
Including a novel series of Patent Prismatic Binocular Glasses.
Lists Post Free to DEALERS.

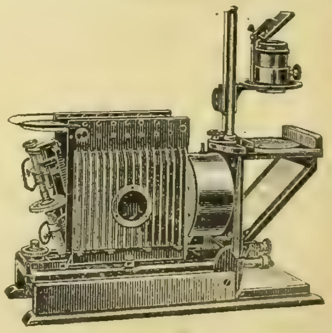
ROSS, LTD., Manufacturing Opticians, 111 NEW BOND STREET, **LONDON, W.**

Special Terms to Chemists.

Established 1830. *Telegraphic Address*—"ROSSANO LONDON."







PHARMACEUTICAL SOCIETY.

OFFICIAL NOTICES.

ANNUAL SUBSCRIPTIONS.

All Annual Subscriptions are now due.

Subscription payable by Members	One Guinea
Subscription payable by Student-Associates ..	Half-a-Guinea
Life Subscription (Members)	Ten Guineas

Subscriptions should be remitted by Post-Office Order, Postal Orders, or Cheque, direct to the Secretary, 17, Bloomsbury Square, or may be paid at the Offices in London or in Edinburgh.

Cheques should be drawn in favour of RICHARD BREMRIDGE, or Bearer, and crossed "London and Westminster Bank," and Post Office Orders and Postal Orders should be made payable at the Western Central District Post Office.

EASTER VACATION.

The School of Pharmacy will be closed from Wednesday, March 26, until Monday, April 21.

The Library and Museum will close on Thursday, March 27, at 2 p.m., and will reopen on Tuesday, April 1, at 9 a.m.

The Secretary's Office will be closed on March 28, 29, and 31.

COUNCIL EXAMINATION PRIZES.

April, 1902.

Pharmaceutical Chemists who were Members of the Society at the time of passing the Major Examination are entitled to compete for the following prizes at the competition next following the date on which they passed the Major Examination :—

First Prize.—Pereira Medal in silver, and a present of books value £5, or thereabouts, given by the late Thomas Hyde Hills in memory of Jacob Bell.

Second Prize.—The Pharmaceutical Society's Medal in silver.

Third Prize.—The Pharmaceutical Society's Medal in bronze.

Subjects of Examination—Materia Medica ; Botany ; and Chemistry.

The next competition takes place on Friday, April 18, and no person will be admitted to compete unless he shall have given notice of his intention to the Secretary on or before Monday, April 14.

The Examination is a written one, and competitors may be examined in London or in Edinburgh.

CALENDAR AND REGISTER.

The new editions of the Calendar and the Register are now ready. Application for copies should be made to the Secretary, 17, Bloomsbury Square, W.C. The price of the Calendar is 2s., and of the Register 5s., exclusive of postage, but in the case of copies purchased by subscribers to the Society postage is not charged.

SOCIETY AND ASSOCIATION NEWS.

Chemists' Managers' and Assistants' Society.—The first annual dinner of this Society was held at the Horseshoe Hotel, Tottenham Court Road, W.C., on Wednesday, March 12. There was not a large attendance, but otherwise everything passed off successfully. The President, Mr. C. E. Pickering, occupied the chair.

Forfarshire and District Chemists' Association.—At a meeting of this Association, on Wednesday, March 19, a resolution of condolence with Mrs. Martindale and family on the death of the late Mr. William Martindale, was passed, and Mr. J. F. Tocher then addressed the meeting on his proposed scheme for University education for pharmacists. A report concerning the Conference was presented and approved.

The British Optical Association.—The first of a series of meetings of refractionists for discussion upon subjects interesting to opticians engaged in sight-testing will be held on Wednesday evening, March 26, at 7.30 p.m., at the Trocadero Restaurant, Shaftesbury Avenue. All members of the Association are cordially invited, together with any optical friends who will apply for a card of admission to the Secretary, Mr. J. H. Sutcliffe, 17, Shaftesbury Avenue, W. There will be no official business transacted, the discussion being purely refractional, and it is hoped that they will not detract in scientific interest from the fact of their being spent in pleasant surroundings.

Public and Poor Law Dispensers' Association.—The second annual smoking concert of this Association was held at Stone's Restaurant, Ludgate Circus, on Wednesday evening, the 12th. There was a very good attendance, and an excellent programme had been arranged by the President of the Association, Mr. Wm. Duff. The chairman for the evening was Mr. A. C. Wootton, member of the Pharmaceutical Council, who carried with him, when he retired from that position at ten o'clock, the hearty thanks of all present, and who voted and sang that he was a "jolly good fellow." He was succeeded by one of the veterans of the Association, and one who is held in high esteem by his colleagues, *i.e.*, Mr. Chas. Spencer, M.P.S., of St. Marylebone Infirmary, and who also at the close of the evening came in for a good share of the cheering and applause, for he had done much for the Association in the past, and had in no small measure contributed to the success, for such it undoubtedly was, of that evening's concert. Of the artists who were present one cannot single out any particular one as being better than another, for all were of good quality and in excellent voice. The comic songs and humorous sketches were perhaps most appreciated. The proceedings terminated with the usual speeches and toasts, and "God save the King" closed the evening at eleven o'clock. Those who were not present missed a really enjoyable evening and reunion.

Edinburgh Pharmacy Athletic Club.—The eleventh annual general meeting was held at 36, York Place, Edinburgh, on March 17, with a very fair attendance, Mr. Rowland occupying the chair. From the Secretary's report the club appears to be in a very prosperous condition, the roll of membership standing at 115. The lively interest taken in the various sections throughout the past season shows there is great vitality among the members. The Treasurer's report also proved very satisfactory, showing an income during the past year of upwards of £140, while the expenditure worked out at considerably less.—Mr. Peter Boa took part in the short discussion which followed, and the Chairman intimated that Mr. Thos. McIlwrick had presented the club with a cup for the Tug of War Competition. The following office bearers were unanimously elected for the ensuing season :—Hon. President, W. Inglis Clark, D.Sc. ; President, J. P. Gibb ; Vice-President, A. G. Paterson ; Secretary, D. S. Napier ; Treasurer, W. C. Taylor ; Assistant Secretary, Harry Smith ; Committee, Aikman, Aitken, Anderson, Harley, Mackay, Rowland, and Somerville ; Auditors, A. S. Birnie and R. K. Kinninmont. In a few well-chosen words the Chairman proposed a vote of thanks to the Pharmaceutical Society for the gracious permission given the club to hold meetings in the Society's House, and also for the courtesy always received at the hands of Mr. J. Rutherford Hill. The sum of £1 1s. was unanimously voted to the Benevolent Fund.—A very fitting answer by Mr. J. R. Hill, who also proposed a vote of thanks to the retiring office bearers, brought the proceedings to a close.

SCHOOL AND COLLEGE NEWS.

Imperial College of Chemistry and Pharmacy.—The students of this college were permitted to inspect the batteries and other electrical apparatus at the General Post Office, London, on Friday, March 14. A Bohemian concert in connection with the college will take place on Wednesday, March 26, at 7.30 p.m., in the large hall of the Albion Hotel, Ludgate Circus. Ladies and old students of this college are heartily invited to be present.

COMPANY INTELLIGENCE.

Air-tight Sealing Development Syndicate, Limited.—This company was registered on March 14, with a capital of £25,000, in £1 shares, to adopt an agreement with E. B. Koopman, and to carry on business as manufacturers of and dealers in mineral waters, etc., as dealers in provisions, etc., and as chemists and druggists, drysalters, etc. No initial public issue. The directors are to be elected by the subscribers. Registered office: 49, Pall Mall, S.W.

W. F. Smith and Co., Limited.—This company has been registered with a capital of £1,000, in £1 shares, to acquire the business of a chemist and druggist carried on by Mr. W. F. Smith, at 23, High Street, Abingdon, and to carry on the business of wholesale and retail chemists, druggists, patent medicine vendors, herbalists, perfumers, oil and colourmen, Italian warehousemen, storekeepers, manufacturers of photographic, optical, surgical, dental, and scientific apparatus and materials, etc. The subscribers include W. F. Smith, Bedwell Place, Abingdon, chemist; A. W. Franklin, 23, High Street, Abingdon, chemist's manager; W. R. B. Arnold, 40, Bath Street, Abingdon, chemist and druggist. There is no initial public issue.

TRADE NOTES AND NOVELTIES.

Rubber Sponges.—Messrs. H. P. Thompson and Co., of Aldersgate Street, supply rubber sponges in two sizes of first-rate quality and suitable for good class trade. With rubber sponges the difficulty has hitherto been that they are hard and somewhat harsh to the skin, but the texture of those shown us is beautifully soft, and they are guaranteed not to become hard by use. They retail at 26s and 32s. per dozen.

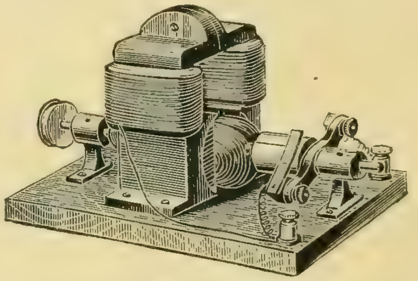
Wool.—Messrs. Henry P. Thompson and Co., 93, Aldersgate Street, E.C., ask us to state that their second shipment of wool in all size packages is now in. The firm think this statement is necessary, as the first shipment was sold right out, consequently they were out of stock for some time. The distinctive feature about their "Patent Handy Package" of wool is not that it is less in price, but that the wool, which is of superior quality, need not be taken out of the container altogether when part only is to be used.

An Attractive Advertisement.—Mr. Percy J. Ashfield, M.P.S., 66, High Street, Rhyl, is to be congratulated on the novel and attractive method he has adopted of advertising his business. The advertisement is in the form of a pretty Japanese handkerchief, upon which is printed "Public Notice," apparently referring to the Anglo-Japanese treaty, commencing with the usual "Whereas" and finishing with "God Save the King," but in reality it refers to the fact that the handkerchief, made in the dominions of Japan, is perfumed with Mr. Ashfields "Welsh Mountain Essence," which may be had at the establishment of the proprietor, "where also prescriptions for the healing of the sick are dispensed by qualified chemists only, and all goods are sold at store prices for cash."

A "Packed Pharmaceuticals" List.—Messrs. Wright, Layman and Umney, Limited, 48, Southwark Street, S.E., have just published a new issue of their illustrated price-list of packed pharmaceutical preparations for retail sale by chemists with or without the retailer's name and address. Like its predecessors, this list is beautifully printed in colours, the illustrations giving a good idea of the neat and attractive appearance of the goods. The labels of the whole series of articles have been carefully designed, but the four sets of labels for preparations of extract of malt are extremely appropriate, while the wrappers and box labels of the toilet soaps are very handsome. Among the items newly introduced into the list are the following:—Anti-obesity pills, ball-floor polish, balsam of horehound, camphor ice, carbolic disinfecting powder, carbolic liquid dentifrice, chilblain ointment, comp. syrup of prunes, comp. syrup of figs (new design), ext. malt (new design), ext. malt and cod liver oil (new design), eau de Cologne dentifrice, Fuller's earth, hair dye, hæmorrhoid ointment, pig powder, malted glycerophosphates, musk scented oatmeal, quinine and iron tonic, quinine wine (new design), rennet powder, rennet essence, saline (new design), seidlitz powder (new design), sylvozone, toilet lanoline, toilet paraffin, and toilet soaps (new designs). Samples of any of the foregoing articles will be sent on application to the firm.

"Coronation" Electric Scarf Pins.—Mr. A. J. Wright, Islington Electrical Works, 318, Upper Street, London, N., is supplying a novelty, which should have a good sale this year, in the form of horseshoe pins, set with brilliants, to which are affixed crown and suitable letters. The pins are fitted with fibre back and hooks, so that a small electric lamp can be easily fitted, or they can be supplied fitted up complete with lamp, wire, and switch. Also complete sets with pin and pocket accumulator or dry battery. The pins are supplied either silver or gilt. The letters are hand cut.

The "Victory" Dynamo.—This is a machine specially designed to meet the requirements of the average amateur for a dynamo, strong and substantial, at a low price. It is fitted with solid brass brush rocker, and extra long and substantial bearings. It will easily light two or three 8-volt lamps, and retails at the exceptionally low price of 15s. Application for further particulars should be made to Mr. A. J. Wright, Electrical Engineer and Manufacturer, 318, Upper Street, Islington, N.



PERSONALITIES, BUSINESS CHANGES, ETC.

Dr. A. P. Luff has removed from 31, Weymouth Street, to 9, Queen Anne Street, Cavendish Square, W.

Mr. E. Browning, chemist and druggist, Plymouth, has transferred his business from Amity Place to more central premises at North Hill, Plymouth.

Mr. William Martindale, past-President of the Pharmaceutical Society, left personalty to the amount of £15,665 12s. 10d., and, according to the *Times*, the legacies mentioned in his will include one of 19 guineas to the Pharmaceutical Society and another of the same amount to the public library at Winchelsea.

The Smith's Prizes have just been awarded for this year to Mr. J. E. Wright (Trinity) and Mr. T. H. Havelock (St. John's), Cambridge. Mr. Wright was Senior Wrangler in 1900, and last year was placed in Class I, Division I., in Part II. of the Tripos. He is a scholar of his college, and was educated at the Liverpool Institute. He is the son of Mr. J. Wright, chemist, 174, Park Road, Liverpool.

MARKET REPORT.

London, Thursday, March 20, 1902.

Business in Drugs and Chemicals has been somewhat more active during past few days, and hopes are expressed that we have now seen the worst of the depression in trade, which at one time threatened to paralyse business. Quinine has been slightly advanced by the makers. Camphor is firm, as also are Quicksilver, Mercurials, and Bromides. Opium is also a shade firmer in consequence of reports of unfavourable weather in the producing districts. Santonine is firmer, and is considered more likely to be dearer than cheaper in the immediate future. Bismuth salts are fairly steady, in spite of the late reduction in price of the Carbonate. Iodides are somewhat unsettled, and there is still the possibility of the combined makers reducing the price. Cottonseed Oil is very firm. Shellac lower. Sulphate of Ammonia firm. Morphine quiet. Codeine firm. Acid Citric, Acid Tartaric, and Cream of Tartar quiet. Acid Carbolic steady. Turpentine firm. Petroleum dull. Glycerin firm. Codliver Oil tending higher for spot and immediate shipment. Acetanilide, Phenacetin and Sulphonal continue dull and weak. Cocaine fairly steady, but more likely to be cheaper than dearer. Sulphate of Copper fairly steady. There are practically no changes of value of any importance to record.

CODLIVER OIL.—The agents here are asking 90s. to 95s. per barrel, according to brand and quantity, for best new non-congealing Norwegian oil, and for immediate requirements they are able to obtain this price, while for later delivery buyers continue to hesitate before ordering at above prices.

QUININE. German manufacturers yesterday advanced their price ½d. per oz. to 1s. 2½d. per oz. for the Sulphate for 1,000-oz. lots in 100-oz. tins, and will only sell to *bonâ-fide* distributors and consumers. In the speculative market disappointment is felt at the slightness of the advance, but there are buyers at 1s. 2½d. for B&S and or Brunswick for August delivery. Everything now depends on the Bark shipments from Java.

THURSDAY'S DRUG SALES.

To-day's Drug Auctions, which comprised only 12 comparatively short catalogues, only consisted of goods which had not been previously offered in public sale. On the whole a fair number of sales were effected, Cardamoms selling well. Ipecacuanha was slow of sale. Buchu Leaves were lower. We give particulars below:—

ALOES.—78 cases good softish Socotrine were bought in at 80s. per cwt. 28 cases Cape were bought in at 36s. per cwt. for fine and at 30s. per cwt. for mixed native.

AMBERGRIS For 1 box of dark colour only 15s. per oz. was bid, and for 1 box grey 40s. per oz., neither bid being accepted.

BUCHU LEAVES.—Of 11 bales fair green rounds only 2 bales sold at 8d. per lb., showing a not inconsiderable decline in value. Other 7 bales ditto only realised 7d. per lb.

CALUMBA ROOT.—50 bags medium washed were taken out at 18s. 6d. per cwt. Other 15 bags of better quality at 25s. per cwt.

CARDAMOMS.—13 cases Mysores only part sold at 1s. 2d. per lb. for C quality. 1 bag fair seeds fetched 1s. 7d. per lb. Other 18 cases sold at 2s. 9d. per lb. downwards, according to quality. Other 47 cases sold at 1s. 10d. per lb. for medium Mysores, downwards, 1 bag fair seed realising 1s. 7d. per lb., and 1 bag inferior ditto 1s. per lb. Other 30 cases Mysores sold at 3s. per lb., subject to holder's confirmation, for good bold, downwards. 44 cases Ceylon Malabars only part sold at 2s. 1d. per lb. downwards, fair seed realising 1s. 8d. per lb. Other 13 cases good East Indian seed were bought in at 1s. 11d. to 2s. 1d. per lb. Other 111 cases Ceylon Cardamoms only part sold at 1s. 10d. per lb. downwards, according to size, etc. Some of the better lots were bought in at 2s. 1d. to 2s. 4d. Other 14 cases sold at 2s. 9d. per lb for fair bold darkish pods, downwards. Other 7 cases only realised 1s. 10d. per lb. downwards, according to size, etc. Other 57 cases practically all sold at 2s. 11d. per lb. for fair bold, downwards. 6 cases fair seeds were bought in at 1s. 9d. per lb.

CASCARILLA BARK.—Of 43 bales only 2 bales sold at 65s. per cwt.; balance bought in at 45s. to 65s. per cwt. 10 barrels siftings were bought in at 35s. per cwt.

COCA LEAVES.—3 cases, each about 50 lb., Ceylon sold at 11¼d. per lb.

COD LIVER OIL.—10 barrels new Norwegian TJH were bought in at 95s. per barrel.

COLOCYNTH.—8 cases fair Spanish were taken out at 1s. 5d. per lb., and at 6s. 6d. per lb. for good bright pulp.

DOLCHICOS DOWN.—1 case containing 340 oz. of rather seedy sold at 1d. per oz.

DRAGON'S BLOOD.—2 cases good bright seedy lump were bought in at £13 per cwt Of other 5 cases 2 cases, consisting of about 10 per cent. fine quality, rest damaged, sold at £10 7s. 6d., remaining 3 cases of dull, seedy quality only realising £8 per cwt.

ERGOT OF RYE.—20 bags good Spanish were bought in at 1s. 9d. per lb. Rather less would, however, probably have been accepted.

GUM ASAFETIDA.—102 packages, only part sold at 30s. per cwt. for rather brownish unsightly blocky almonds, 2 cases loose almonds, some blocky, realising 77s. 6d. per cwt.

GUM BENZOIN.—Of 40 cases Sumatra 30 cases sold at £5 10s. to £5 12s. 6d. per cwt. for medium thirds. Other 40 cases ditto nearly all sold at £7 5s. to £7 7s. 6d. per cwt. for fair seconds. Of 50 cases good Palembang, only 10 cases sold at 37s. 6d. per cwt. Other 50 cases ditto were bought in, nominally at 42s. 6d. per cwt.

GUM KINO.—4 cases East Indian were bought in at 1s. per lb.

GUM OLIBANUM.—42 cases of slightly blocky gum did not sell.

HELLEBORE POWDER.—10 bags were bought in at 17s. per cwt.

HONEY.—165 packages Jamaica nearly all sold at 13s. 6d. to 17s. per cwt., according to quality, for barrels, and at 15s. to 20s. per cwt. for tins and cases. Other 22 packages sold at 15s. per cwt. for tins and cases, and 14s. 6d. to 15s. for barrels. 40 cases Californian were bought in at 35s. per cwt.

IPECACUANHA.—20 bales Rio only part sold at 9s. 9d. to 10s. per lb. Other 10 bales did not sell. Of other 13 bales only 3 bales sold at 9s. 10d. to 9s. 11d. per lb. Other 2 bags each about 56 lbs., quality of which was not desirable, only realised 9s. 6d. per lb. 13 bags Carthagena part sold at 4s. 3d. per lb. for the sound, and at 4s. per lb. for SD. Other 5 barrels did not sell.

LIME JUICE.—2 casks West Indian sold at 1s. per gallon.

MENTHOL.—5 cases crystals failed to find a buyer.

MUSK SEEDS.—2 casks were bought in at 1s. 4d. per lb.

NUX VOMICA.—435 pockets Calcutta were bought in at 8s. 6d. per cwt.

ORANGE PEEL.—6 cases part sold at 3½d. to 4d. per lb. Other 11 cases bright thin cut did not sell.

QUINCE SEED.—3 bags of good quality sold at 1s. 3d. per lb.

RHUBARB.—10 cases good flat high dried did not sell. Of other 10 cases only 3 cases sold at 9d. per lb. Of other 12 cases 2 cases fine Shensi were taken out at 3s. 6d. per lb., balance at 2s.

ROSE OIL.—7 pots were bought in at 6d. to 9d. per oz., 3 bottles settlings seling at 1½d. to 2d. per oz.

SAFFRON.—12 tins Spanish were bought in at 22s. per lb.

SARSAPARILLA.—Of 16 bales Lima only 6 bales sold at 1s. 1d. to 1s. 2d. per lb. for sound, 1 bale SD only realising 10d. per lb.

SENEKA ROOT.—5 bales were bought in at 2s. 6d. per lb.

SENNA.—58 bales Tinnivelly only part sold at ¾d. to 1¼d. per lb., 3 bales pods at 2d. 59 packages Alexandrian were taken out at 3d. to 6d per lb. for fair to good leaf. 5 bales good pods fetching 7d. to 8d. per lb. Other 1 bale ditto sold 3¼d. per lb., subject to holders' approval.

STROPHANTHUS SEED.—9 bags dull brownish Kombé Seed sold, 3 bags at 2s. per lb., and 6 bags at 1s. 6d. per lb.

SUGAR OF MILK.—18 cases, each about 1 cwt., were bought in at 40s. per cwt.

THYME SEED (ADJOWAN).—25 bags East Indian wild thyme were taken out at 10s. per cwt.

VALERIAN ROOT.—12 bales Japanese were bought in at 35s. per cwt.

WAX.—1 case Jamaica sold at £7 12s. 6d. per cwt; 1 barrel ditto at £8. Other 2 packages West Indian at £7 10s. and £7 12s. 6d. 30 packages Zanzibar, nearly all sold at £6 15s. to £7 5s. per cwt. 1 bag Nyassaland realised £5 15s. per cwt. 50 mats Madagascar, part sold at £6 7s. 6d. to £6 12s. 6d. per cwt. Other 7 mats at £7 10s. 11 bags Australian sold at £7 5s. per cwt. 11 bales bleached Spanish were taken out at £8 5s., and 20 cases white Calcutta at £7 per cwt.

DIARY OF THE WEEK.

Tuesday, March 25.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION.—Debate: "Prescribing and Dispensing." Introduced by Arthur Hanson.

ROYAL PHOTOGRAPHIC SOCIETY, 66, Russell Square, London, W.C., at 8 p.m.—"The Photographic Investigation of Modern Astrophysical Problems," by C. J. Butler.

Wednesday, March 26.

CHEMISTS' MANAGERS' AND ASSISTANTS' SOCIETY OF GREAT BRITAIN, Horse Shoe Hotel, Tottenham Court Road, at 9 p.m.—"Chemists' Prices, Old and New," by Geo. Cullwick.

BRITISH OPTICAL ASSOCIATION, Trocadero Restaurant, Shaftesbury Avenue, W.—First of a Series of Meetings of Refractionists for Discussion upon Subjects Interesting to Opticians engaged in Sight Testing.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION, 36, York Place.—"Research Work in Pharmaceutical Advancement," by W. Lyon.

PUBLIC AND POOR LAW DISPENSERS' ASSOCIATION, St. Bride's Institute, Bride Lane, Ludgate Circus, E.C., at 8 p.m.—General Meeting.

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

John Richard Inman and Richard George Whitford, trading as J. R. Inman and Co., chemical manufacturers, "The Phœnix" Chemical Works, 2B, Tower Chambers, Liverpool. Debts will be received and paid by R. G. Whitford.

Paul Doumin, Paul Jeancard, and Joseph Gazon, essential oil distillers, 13, Saint Mary Axe, London. Debts will be received and paid by Paul Doumin.

Charles Bagge Plowright and John Hunter Henderson, medical practitioners, King's Lynn, Norfolk.

RECEIVING ORDERS IN BANKRUPTCY.

James Joseph O'Donnell, surgeon, formerly of Hawthorns, Hindley, now of His Majesty's Gaol, Walton, Liverpool.

William Arthur Jones, Surgeon, 85 and 120, Albany Road, Camberwell.

Edward Howard Hasselby, chemist and druggist, St. Leonard's-on-Sea.

Cuthbert Rutherford, doctor of medicine, 2, East View, South Shields.

Notices to Correspondents.

ALL COMMUNICATIONS FOR THE 'PHARMACEUTICAL JOURNAL' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street Lincoln's Inn, London.

CONTRIBUTIONS sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

CORRESPONDENTS should write in ink, on one side of the paper only, and must authenticate the matter sent with their names and addresses, though not necessarily for publication. No notice can be taken of anonymous communications.

DRAWINGS FOR ILLUSTRATIONS should be executed twice the desired size, clean sharp lines being drawn with a pen and liquid Chinese ink. Shading by washes is inadmissible. Photographs can be utilised in certain cases.

NAMES AND FORMULÆ should be written with extra care, all systematic names of plants and animals being underlined, and capital letters used to commence generic but not specific names.

REPRINTS OF ARTICLES cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Ashfield, Atkins, Bessant, Butterfield, Crook, Davis, Dott, Drayton, Edwards, Elliott, Ferry, Gamble, Gilmour, Haley, Hannah, Hill, Holt, Kirkby, Laverack, Lovatt, Lyon, Marsland, Merson, Morgan, Mumbray, Munro, Nunn, Perry, Polley, Randall, Rennie, Robinson, Samuel, Sharp, Smith, Sutcliffe, Thomas, Tocher, Usher, Watson, Woolcock, Wright.

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Full Catalogue and "How to Disinfect" Book will be sent free on application to—

THE "SANITAS" CO., Ltd., Bethnal Green, LONDON, E.

Antitoxine is the only Anti-pyretic and Anti-neuralgic which has been demonstrated by the Sphygmograph to be a powerful heart stimulant.

NET PRICE:—Reduced to 3/- per ounce for Powder and 5-grain Tablets.

DEAR SIR, AMESBURY, SALISBURY, WILTS.

In reply to your letter asking my opinion of Antitoxine, I have much pleasure in saying that in Migraine and certain Neuralgias of the face I have found the drug almost a specific, and in every case there has never been any sign of cardiac depression, rather the reverse; a "feeling of warmth all over the body," as they have expressed after taking it. I always have it in my surgery, for use in the cases above-mentioned, having up to the present used several ounces of it. Just now I am exhibiting it in a patient with high fever from Acute Cystitis, and have every confidence that it will act as an antipyretic in conjunction with other drugs appropriate for this disease. You may make use of my name if you wish it, as I think the drug should be more popularly known by the Medical Profession.

I remain,
(Signed) Yours faithfully,
HENRY BROWNE, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A. Lond.

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147, Houndsditch, London, E.C.

PUBLICATIONS RECEIVED.

SOME AUSTRALIAN FOOD-ADJUNCTS; AND USEFUL AUSTRALIAN PLANTS. By J. H. MAIDEN. Reprinted from the *Agricultural Gazette* of New South Wales, 1901. From the Author.

FURTHER NOTES ON SUPPOSED HYBRIDISATION AMONGST EUCALYPTUS (including a description of a new species). By H. DEANE and J. H. MAIDEN. Reprinted from the 'Proceedings of the Linnean Society of New South Wales,' 1901. From the Authors.

NOTES ON THE BOTANY OF PITCAIRN ISLAND. A Paper read before the Australian Association for the Advancement of Science, by J. H. MAIDEN. From the Author.

Pharmaceutical Journal

SATURDAY, MARCH 29, 1902.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

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Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Platinum Utensils and scraps for cash.—P. Rowsell, 9, Derwent Grove, Dulwich.

Quain's Dictionary Medicine, '94; state lowest price.—Godson, Chemist, Old Basford, Notts.

White's Pharmacopedia; Everett's Physics; latest edition; good condition.—Irving, Chemist, Skipton.

Fernie's "Herbal Simples," second edition.—Particulars and price to A. R., Pharm. Journal Office, 8, Serle St., W.C.

Wanted.—Odd numbers and volumes Pharm. Jl., Chem. Soc. Jl., The Analyst, Chem. News, Chem. Gazette, Amer. Chem. Jl., Amer. Chem. Soc. Jl., and others; also part and complete sets.—Address offers, "Drachma," Pharm. Journal Office, 8, Serle St., London, W.C.

OFFERED.

100 G. B. Kent Preference Shares, 22s.—M., 30, Tranquil Vale, Blackheath, S.E.

Photographic Mounts. 2,500 cabinets, 25s.; 2,000 C.D.V.'s, 7s. 6d. to clear.—Edward Peck, East Dereham.

What offers, for whole or part, *C. & D.* for 1896, '97, '98, '99, '00, and '01? about 3 missing; unbound.—McGibbon, Wath-on-Dearne.

OFFERED—*Continued.*

Ten Vols. Pharmaceutical Journal 1869-1878 complete; leather back, marble side; splendid condition, offers.—Young, News Office, Chard.

Stephenson and Churchill's Medical Botany with 185 beautifully coloured plates; 4 vols. 8vo; gilt top; perfect unspotted copy; price 35s.—Homo, 8, Serle St., W.C.

Pharmaceutical Journals. Vols. I. to XIII. inclusive; ditto, July, 1875, to June, 1899; all well-bound and in perfect condition; also Year Book, 1870 to 1898; what offers?—Smith and Son, 102, The Parade, Leamington.

Fish Knives and Forks.—Six pairs very handsome, best silver plated fish knives and forks, with beautiful sterling hall-marked silver handles, by Mappin, in elegant case, only £2; worth £4. Also pair of silver plated fish servers to match, only 18s. 6d.; worth 38s. Both new. Presents. Approval before payment willingly.—Mr. Ralph, Cambridge House, Lakenheath, Suffolk.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

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NOTICE TO ADVERTISERS.

On account of GOOD FRIDAY occurring this week, the PHARMACEUTICAL JOURNAL *is published a day earlier than usual. Advertisements not received in time for insertion in this week's issue will appear in the Journal of April 5.*

Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

A Copy of this Inset will be forwarded gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at more than two hundred addresses in the United Kingdom; a list of these will be found on page 14.

WANTED, a competent qualified Assistant; good salary.—D. Marchant, Chemist, Eastbourne.

LONDON (Suburb), S.W.—Junior Assistant for select Dispensing and Retail business; indoors.—Chemicus, Messrs. Barron Harveys, Giltspur Street, E.C.

IMPROVER or Turnover, in good class Dispensing business; plenty of time for study and comfortable home.—Apply Crisford, Chemist, St. Leonards-on-Sea.

JUNIOR Assistant. — Messrs. J. and H. Mathews, 68, Queen's Gardens, Hyde Park, W., require a Junior Assistant, accustomed to first-class pharmacy; qualified preferred.

STICKLAND & CO., of Cromwell Place, S. Kensington, are in want of a qualified Assistant, who has been accustomed to best class Retail and Dispensing; age about 24; tall preferred; indoors.

CAPE TOWN.—Required gentlemanly Assistant; qualified; usual three years' agreement; second-class passage paid.—Apply, with full particulars to J. C. H. Hewlett & Son, 40, Charlotte St., London, E.C.

HARROGATE.—Junior Assistant wanted for six months' engagement from May 1st.—Send usual particulars, age, height, experience and salary required (outdoor), to J. R. Kirk, Chemist, Lower Harrogate.

WANTED, an Assistant, 22 to 23 years of age, indoor; accustomed to best class Dispensing business.—Apply, giving full particulars and salary required, to Frost & Cope, Pharmaceutical Chemists, Derby.

JUNIOR or Improver wanted; outdoors; also an Apprentice; half-holiday weekly; no Sunday duty.—Apply, with the usual particulars, to Charles Thompson, Pharmaceutical Chemist, Sparkbrook, Birmingham.

JESSE WILLIAMS & CO., Chemists, Cardiff, want an Assistant for the Dispensing Counter immediately.—Please state in first letter full particulars, including age, height, salary required, and when disengaged.

GOOD Junior wanted, not under 22, accustomed to high-class Dispensing and Retail; indoors; abstainer preferred.—State experience, salary required, and enclose photo, or apply personally, R. H. Parker, 35, Clifton Rd., Maida Vale, W.

LIVERPOOL (near).—A Junior or Turnover Apprentice wanted, aged about 18; could attend Liverpool School of Pharmacy.—Apply, with photo, stating age, height and reference, with salary expected, to Hinkley, 149, Victoria Road, Seacombe, Liverpool.

HENRY JEFFRIES, Guildford, has a vacancy for a smart Junior or Improver for a good class Dispensing and Retail business; some previous knowledge of dispensing essential.—Apply (enclosing photo, if possible), stating age, experience, salary, and when disengaged.

Assistants Wanted—Continued.

LONDON, S.W.—Competent Junior, with some experience in Dispensing, wanted after Easter; not under 21; good-class modern Retail and Dispensing business.—Write or call, Keith Longstaff, The Central Pharmacy, 811, Fulham Road, S.W. (a little beyond Walham Green).

WESTERN AUSTRALIA.—Required to manage an old-established business, a qualified Chemist with good experience; age about 27; salary, £200 per annum, with rooms in upper part of premises; three years' agreement; second-class passage paid; proprietor can be interviewed here.—Apply Messrs. Hewlett & Son, 40, Charlotte St., London, E.C.

CAPE COLONY.—Wanted, qualified Assistant, of good experience and having undeniable references; aged about 23; salary 1st year, £12 per month; 2nd year, £13 per month; 3rd year, £14 per month; sleeping accommodation provided; second-class passage paid out; 3 years' agreement.—Apply, Colony, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CALCUTTA.—Wanted at once, a qualified Assistant; age about 24 years; must be able to conduct analysis; first-class opening for a competent man. Salary, 1st year, 275 Rs. per month; 2nd year, 300 Rs. per month; 3rd year, 325 Rs. per month, and 4th year, 350 Rs. 4 years' agreement. Second class passage paid both ways.—Apply by letter to Calcutta, c/o Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

INDIA (N.W. Province).—Wanted, a good Assistant, well up in all branches of a Chemist's business; Minor qualification. Salary, 1st year 150 rupees per month, 2nd year 175 rupees per month, 3rd year 200 rupees per month; free furnished apartments; second-class passage paid out; required to start early in April; candidates must hold undeniable references.—Address, India, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

MEDICAL man requires capable Dispenser at once; advertiser requires a diligent, studious man, who will not mind helping a busy medical man in various ways, including examination of urine chemically and microscopically; advertiser will teach latter mode; plenty of time for reading; two recent first-rate testimonials required; please state age, salary required (out-door).—Address, Radix, Pharm. Journal Office, 8, Serle Street, London, W.C.

CAPE COLONY.—Wanted, good Assistant, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £150; second year, £160; third year, £170; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, Cape, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified Assistant; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to Straits Settlements, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

SANITARY INSPECTORSHIPS.—Salaries £100 to £250. Numerous vacancies. Permanent appointments. Chemists or Assistants desiring change of occupation should qualify as Sanitary Inspectors. Special Postal Course of Lessons now commencing for London, Liverpool, Leeds, Cardiff, Manchester, Leicester, Newcastle-on-Tyne and Belfast exams. Anyone of average ability can pass. Had over 250 successful candidates, and fully half had no previous knowledge of sanitary matters.—Apply, Robert H. Mushens, Sanitary Science Teacher, Sunderland.

Assistants Wanted—Continued

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BRADFORD POOR LAW UNION.

Dispenser for Union Hospital Wanted.

THE Guardians require the services of a duly qualified man as Dispenser for the Union Hospital.

He must be a Licentiate of the Society of Apothecaries of London, or hold a Certificate of that Society as to his qualifications to act as an Assistant in Compounding and Dispensing Medicines, or shall have been duly qualified under the Pharmacy Act as qualified to compound medical prescriptions. Salary, £110 per annum, non-resident. Schedule of duties may be had from the undersigned, to whom applications in own handwriting, accompanied by certificates and testimonials, are to be sent so as to be received before 10 o'clock on Monday, the 7th day of April next.

THOS. CROWTHER,
Clerk to the Guardians.

22, Manor Road,
Bradford, 20th March, 1902.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM, qualified; abstainer.—E. Kemp, 11, Cheapside, St. Leonards-on-Sea.

YOUNG LADY (qualified) wants Dispensership.—M., 60, Clapham Rd., S.W.

LOCUM, M.P.S.; town or country; disengaged.—W. Smith, 12, Westfield Rd., Surbiton.

TEMPORARY Manager or Senior; qualified; disengaged; height 5 ft. 10½ in.—Holifield, 137, Finborough Rd., S.W.

ASSISTANT (outdoors) or Branch; prescriber; experienced; married. — Disengaged, Mertonville, Park Avenue, Worcester.

PART-TIME Dispensing; Doctor's preferred; Notting Hill or Bayswater district; Minor qualification; excellent references.—Minor, 2, Denman Street, Piccadilly Circus, W.

LOCUM TENENS; days, weeks; moderate; reliable; engagements booked forward.—T. C. Beach, M.P.S., Windsor Edge, Inchbrook, Stroud, Glos. Telegrams: Beach, Nailsworth.

EMERGENCY.—Locum Tenens for mixed business; qualified; abstainer; extractor; prescriber; excellent recent testimonials; disengaged Easter holidays; usual terms.—Brewerton, 133, Liverpool Rd., Birkdale, Southport.

Death

HOWORTH.—On March 20th, at his residence, "Trelearwith," St. John's Avenue, Bridlington, James Howorth, late of Doncaster, aged 78 years and a day.

CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

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MESSRS. ORRIDGE & CO., Chemists' Transfer Agents, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

The Business conducted by Messrs. Orridge & Co. has been known as a Transfer Agency in the advertising columns of the Pharmaceutical Journal since the year 1846, and is well known to all the leading firms in the Trade.

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VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

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VENDORS saved time and trouble by consulting before offering for sale. PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address,* "Tomtom."

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows:—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

£225, price of stock and fixtures only.—Light Retail, Prescribing and Photographic Business; large shop, nicely fitted; excellent opening for Dentistry; large house, good garden, moderate rental, on lease; opening for pushing man, with capital to stock well.—Apply, 14, Melbourne Grove, East Dulwich, S.E.

PRESCRIBING and General Business and premises, consisting of shop, large room and cellar, with dwelling-house (let off); North-East district; an excellent position for Prescriber and Extractor; large profits; business been neglected; satisfactory reason for disposal. — Apply, Medicus, Pharm. Journal Office, 8, Serle St., London, W.C.

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ADVERTISEMENT INSET

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WHERE THE INSET CAN BE OBTAINED.

Pharmaceutical Society of Great Britain.
17, Bloomsbury Square, London, W.C.
36, York Place, Edinburgh.

Also at the Advertising Agency of Messrs. G. Street & Co., Ltd., 30, Cornhill, E.C.; 8, Serle St., W.C.; and 164, Piccadilly, London, W.

London, E.C.

Messrs. Barron, Harveys & Co., 6, Giltspur St.
Messrs. Evans, Lescher & Webb, Bartholomew Cl.
Messrs. S. Maw, Son & Sons, Aldersgate St.
Messrs. F. Newbery & Sons, 27, Charterhouse Sq.
Imperial College, Ludgate Circus.
Mr. R. Howden, 28, Gracechurch St.

W.C.

Mr. A. E. Lawson, 60, Exmouth St.
Mr. W. Warren, 24, Russell St., Covent Garden.
City School of Pharmacy, 27, Chancery Lane.

W.

Mr. F. Andrews, 34, Leinster Terrace.
Mr. E. Beaton, 5, Lonsdale Terrace, Kew Gardens.
Mr. T. W. Cleave, St. Mary's Rd., Ealing.
Mr. R. H. Parker, 35, Clifton Rd., Maida Vale.
Mr. W. Pickard, 3, West Kensington Terrace.
Mr. S. A. Sturton, 9, Goldhawk Rd.

S.W.

Mr. H. Bate, 125, South Lambeth Rd.
Mr. W. F. Gulliver, 6, Lower Belgrave St.
Mr. A. J. Phillips, 156, Cromwell Rd.
Mr. W. Wilson, 281, Brixton Rd.
London College of Chemistry, 323, Clapham Rd.

N.W.

Mr. C. B. Allen, 20, High Rd., Kilburn.
Mr. J. C. Hyslop, 39, Church St., Marylebone.
Mr. C. W. Matthews, 6, Fortess Rd.
Mr. G. H. Peters, 2, Osnaburgh St.
Mr. E. B. Stamp, High St., Hampstead.
Mr. J. W. Taplin, 3, Imperial Pde., Cricklewood.
Mr. T. M. Taylor, 13, Queen's Ter., St. John's Wood.
Mr. R. Thomas, 13, Upper Baker St.

N.E.

Mr. G. B. Barnard, 309, Hackney Rd.
Mr. T. Nicholls, 199, Wick Rd.

N.

Mr. H. Cryer, 506, Holloway Rd.
Mr. John H. Frost, 9, High St., Hornsey.
Mr. J. Holding, 169, Hemingford Rd.
Mr. J. T. Wallis, 78, Essex Rd.

E.

Mr. W. R. Barnes, The Terrace, Upton Manor.
Mr. C. E. Garman, 278, Roman Rd., Bow.
Mr. J. H. Gradidge, 393, Mile End Rd.
Mr. Snowden Kirk, 6, Chrisp St., Poplar.
Mr. J. H. Smith, 227, Commercial Rd.

S.E.

Messrs. Birch & Co., 59, Church Rd., Norwood.
Messrs. Wright, Layman & Umney, Ltd.
Mr. A. Pellew, 374, Old Kent Rd.
Mr. W. C. Sayers, 63, High St., Lewisham.
Mr. H. Wiggins, 236, Southwark Park Rd.
Metropolitan College, 160, Kennington Park Rd.
South London School, Kennington Rd.
Westminster College of Chemistry, Trinity Square.

Provinces.

BEDFORD.—Mr. J. B. Taylor, 69A, High St.
BIRKENHEAD.—Mr. H. B. Morgan.
BIRMINGHAM.—Mr. J. Poole, 13, Gt. Hampton St.
  Mr. C. Thompson, Sparkbrook.
  Mr. G. E. Perry, 171, Hagley Rd., Edgbaston.
  Messrs. F. Green & Co., Phœnix Mills, 393, Farm St.
  Mr. J. Austin, 395, Nechells Park Rd., Nechells.
  Messrs. Southall, 19-21, Lower Priory.
BLACKPOOL.—Mr. C. H. Turver, 40, Market St.
BOLTON.—Mr. Percy Knott, 1, Blackburn Road.
BOOTLE.—Mr. H. Wyatt, 223, Stanley Road.
BOSTON.—Mr. B. J. Kent, Spilsby Road.
BOURNEMOUTH.—Mr. F. E. Bilson.
BRADFORD.—Mr. A. H. Waddington, 31, Darley St.
  Mr. J. A. Mitchell, 33, St. Mary's Rd.
BRAINTREE.—Messrs. Row & Son, High St
BRENTFORD.—Mr. A. Wood, 116, High St.
BRIGHTON.—Mr. J. R. Gwatkin, 49, Grand Parade.

Provinces.—*Continued.*

BRISTOL.—Mr. B. Keen, 90, Park St.
  Mr. E. F. Young, 67, Wells Road.
BURNLEY.—Mr. J. A. Heaton, 121, St. James' St.
BURY ST. EDMUNDS.—Mr. O. A. Clark.
CAMBRIDGE.—Mr. A. S. Campkin, 11, Rose Cresc't.
CANTERBURY.—Mr. C. Bing, 43, St. George's St.
CARLISLE.—Mr. J. Hallaway, 5, Devonshire St.
CHELTENHAM.—Mr. W. Barron, 1, North Parade.
CHESTER.—Messrs. Davies & Shepheard.
CHORLEY.—Mr. W. Hill, 25, Market St.
COLCHESTER.—Mr. A. Weddell, 105, High St.
CREWE.—Mr. J. Cumming, 6, Victoria St.
CROYDON.—Mr. J. Clarke, 38, George St.
DARLINGTON.—Mr. J. Robinson.
DARWEN.—Mr. R. Shorrock, 6, Market St.
DEVONPORT.—Mr. C. T. Weary, 17, Trafalgar Pl.
DEWSBURY.—Mr. R. Gledhill, 61, Westgate.
DONCASTER.—Mr. M. H. Stiles, 2, Frenchgate.
DOVER.—Mr. R. M. Ewell, 34, Townwall St.
ENFIELD.—Mr. F. Goldby, Enfield Town.
EXETER.—Mr. D. Reid, 2, Queen St.
GATESHEAD.—Mr. Matthew Bell, 9, Brinkb'k Av.
GLOUCESTER.—Mr. W. Minchin, 15, Westgate St.
GRANTHAM.—Mr. W. Whysall, High St.
GRAVESEND.—Mr. R. Feaver Clarke 21, High St.
GRIMSBY—Mr. H. W. Colley, 253, Cleethorpe Rd.
GT. YARMOUTH.—Mr W. S. Poll, 32, Regent Rd.
HARROW-ON-THE-HILL, Mr. S. J. Gunn, High St.
HARTLEPOOL.—Mr. J. Horsley, 104, High St.
HASTINGS.—Messrs. J. Bell & Co., 22, Robertson St.
HEXHAM.—Messrs. Gibson & Son, 16 & 18, Fore St.
HEYWOOD.—Mr. F. Hazlitt, Market St.
HITCHIN.—Messrs. W. Ransom and Son.
HORNCASTLE.—Messrs. W. Kemp & Son.
HUDDERSFIELD.-Mr. R. C. Walshaw, 4, Market Pl.
HULL.—Mr. C. B. Bell, 6, Spring Bank.
  Mr. C. Hoyles, Holderness Road.
  Mr. A. Richardson, 443, Hessle Road.
IPSWICH.—Messrs. Wiggin & Son, 34, St. Matthew's.
JARROW-ON-TYNE, Mr. J. D. Rose, 18, Ormonde St.
KENDAL.—Messrs. Severs & Bateson.
KIDDERMINSTER.—Mr. M. Smith, 48, Oxford St.
LANCASTER.—Mr. J. Vince, 37, Cheapside.
LEEDS.—Mr. W. S. Baxter, Bramley.
  College of Pharmacy, 19, Springfield Place.
  Mr. F. C. Long, Headingly.
  Messrs. Reynolds & Branson, Ltd., 13, Briggate.
LEICESTER.—Mr. F. W. Goodess, Hotel St.
LINCOLN.—Mr. J. T. Birkbeck, 5, Bailgate.
LIVERPOOL.—Mr. A. Buck, 179, Bedford St.
  Mr. W. H. Clubb, 138, Smithdown Rd.
  Mr. C. W. Cooke, 323, Park Rd.
  Mr. J. W. Kelly, 16, County Road, Walton.
  School of Pharmacy, 6, Sandon Terrace.
  Messrs. Symes & Co. Ltd.
  Mr. F. Walker, Beacon Lane.
LYNN.—Mr. W. W. Crisp, 3, Saturday Market.
MAIDSTONE.—Mr. F. Corfe, 5, Gabriels Hill.
MANCHESTER.—Mr. J. H. Nidd, 714, Rochdale Rd.
  Mr. H. Kemp, 35, Wilbraham Rd., C/H.
  Mr. C. Swinn, Upper Moss Lane.
  Mr. G. L. Westmacott, 17, Market St.
  Mr. J. B. Williams, 42, Brook St.
  Messrs. Jas. Woolley, Sons & Co., Ld.
  Northern College, 100, Burlington St.
  Manchester College, 225A, Oxford St.
MANSFIELD.—Mr. D. J. Patterson, West Hill.
MORPETH.—Mr. J. Whittle, Bridge St.
NEWCASTLE-ON-TYNE.—School of Chemistry, 55, Northumberland St.
  Messrs. Proctor, Son & Clague, 11, Grey St.
NEWPORT (Mon.).—Mr. T. P. Garrett.
NORTHWICH.—Mr. G. Humphreys, High St.
NOTTINGHAM.—Mr. F. R. Sergeant.
  School of Pharmacy, 13, Victoria St.
NORTHAMPTON.—Mr. John Bingley.
NORWICH, Messrs. Fuller & Co., Rampant Horse St.
NUNEATON.—Mr. G. Iliffe, Market Place.
OLDHAM.—Mr. H. Bates, 38, George St.
OXFORD.—Mr. T. J. Burbank, 116, Walton St.
PETERBOROUGH.—Messrs. Sturton & Sons.
PLYMOUTH.—Messrs. Balkwill & Co.
  Mr. C. J. Park, Mutley Plain.
PORTSMOUTH.—Mr. T. Brewis, 325, Fratton Rd.

Provinces.—*Continued.*

PRESTON.—Mr. F. A. Williamson, Garstang Rd.
RAWTENSTALL.—Mr. J. E. Lord, Rossendale.
REDHILL.—Mr. W. H. Fowler, 2, Station St.
ROMFORD.—Mr. J. W. Lasham, High St.
ROTHERHAM.—Mr. J. Horsfield, 1, College St.
RYDE.—Mr. H. Pollard, 168, High St.
ST. HELENS, Mr. J. G. Wallbridge, 52, Liverpool Rd.
ST. LEONARD'S-ON-SEA.—Mr. C. R. Stedman.
SCARBOROUGH.—Mr. J. Whitfield, 113, Westboro.
SHEFFIELD.—Mr. H. Antcliffe, West Bar.
  Mr. P. Carr, 85, Ecclesall Rd.
  College of Pharmacy, 116A, The Moor.
  Mr. G. T. W. Newsholme, 27, High St.
  Mr. J. B. Pater, Broomhill.
  Mr. G. Squire, 19, Haymarket.
SHREWSBURY.—Mr. W. G. Cross, 70, Mardol.
SOUTHAMPTON.—Messrs. Randall & Son.
SOUTHPORT.—Mr. Jas. Righton, 293, Lord St.
STAFFORD.—Mr. J. Averill, 10, Market Square.
STOCKPORT.—Mr. W. B. Orton, 67, St. Petersgate.
STOCKTON-ON-TEES.—Messrs. Brayshay & Son.
STOKE-ON-TRENT.—Mr. F. Adams, High St.
SUNDERLAND.—Mr. C. Ranken, Stockton Road.
TODMORDEN.—Mr. H. P. Lovatt, 6, Water Street
TOTTENHAM.—Mr. A. E. Tanner, Tottenham Ter.
TUNBRIDGE WELLS.—Mr. A. E. Hobbs.
ULVERSTON.—Mr. R. Willan, 5, Market St.
WAKEFIELD.—Mr. J. H. Chaplin, 60, Westgate.
WALSALL.—Mr. E. M. Elliott, 42, Park St.
WARRINGTON.—Mr. H. N. Ashton, 63, Sankey St.
  Mr. J. Rymer Young, 40, Sankey St.
WESTON-SUPER-MARE.—Mr. John Cooper.
WIDNES.—Mr. C. J. Bennett, 32, Victoria Rd.
WIGAN.—Mr. J. Phillips, 58, Wallgate.
WINCHESTER.—Mr. A. E. Chaston, High St.
WINDSOR.—Mr. B. Westlake, 91, Peascod St.
WOLVERHAMPTON.—Mr. T. J. Gibson.
WOOLWICH.—Mr. A. J. Wing, 69, Powis St.
WORKINGTON.—Mr. J. R. Mason, 4, Pow St.

Wales.

ABERAVON.—Mr. G. B. Loveluck, High St.
BANGOR.—Mr. Owen Jones, Market Place.
FLINT.—Mr. O. William Jones, Apothecaries' Hall.
HOLYHEAD.—Mr. F. J. Jones, 12, Market Place.
MERTHYR.—Mr. E. W. Harris, 128, High St.
SWANSEA.—Mr. N. M. Grose, 8, Temple St.
WREXHAM.—Mr. C. G. Caldecott, Regent St.

Scotland.

ABERDEEN, Mr. John Cruickshank, 42, George St.
ARBROATH.—Mr. A. Naysmith, High St.
DUNDEE.—Mr. C. Kerr, 56, Nethergate.
EDINBURGH.—Mr. J. A. Forret, Brougham Place.
  Mr. C. F. Henry, 1, Brandon Terrace.
FALKIRK.—Mr. W. Forgie, 105, High St.
GLASGOW.—Mr. T. Dunlop, 181, Albert Road.
  Mr. J. A. Russell, 212, New City Rd.
  School of Pharmacy, 180, West Regent St.
  Mr. J. W. Sutherland, 127, Buchanan St.
GREENOCK.—Mr. A. McNaught, 4, W. Blackhall St.
HAWICK.—Mr. W. S. Turnbull, 2, Dovemount Pl.
KIRKCALDY.—Mr. David Storrar, 228, High St.
LEITH.—Mr. J. Bowman, 3, Duke St.
LINLITHGOW.—Mr. A. Spence, 135, High St.
MONTROSE.—Mr. A. Davidson, 172, High St.
PAISLEY.—Mr. A. Fraser, 100, High St.
PETERHEAD.—Mr. J. F. Tocher, 1, Chapel St.
STIRLING.—Mr. John Raffan, 16, Port St.

Ireland.

BELFAST.—Messrs. Grattan & Co., Ltd.
  Mr. J. B. Robinson, Duncairn Medical Hall.
  Mr. J. C. Payne, 13, Shaftesbury Sq.
CORK.—Mr. T. R. Lester, 106, St. Patrick St.
DALKEY.—Mr. G. D. Beggs, Medical Hall.
DUBLIN.—Apothecaries' Hall, 40, Mary St.
  Mr. J. I. Bernard, 26, Clare St.
LIMERICK.—Messrs. John Laird & Co.
LONDONDERRY.—Messrs. Maxwell, Greer & Co
WATERFORD.—Messrs. G. White & Sons.

Calendar for April, 1902.

Day of		Events of the Month.	Sun	
M	W		Rises	Sets.
1	Tu	Easter Tuesday. ◖ Last Quarter, 6.24 a.m.	5.39	6.30
2	W	Morse died 1872, born April 27, 1791.	5.37	6.32
3	Th	Linnean Society, at 8 p.m.	5.35	6.34
4	F	Northampton Chemists' Association, Annual Meeting.	5.32	6.35
5	S	Lord Lister, F.R.C.S., born 1827.	5.30	6.36
6	**S**	**First Sunday After Easter.**	5.28	6.38
7	M	Wolverhampton Chemists' Association. Society of Chemical Industry, at 8 p.m.	5.25	6.39
8	Tu	● New Moon, 1.50 p.m. Pharm. Soc. G. B., Finance and other Committees. Gresham Lectures, at 6 p.m. Royal Institution, at 3 p.m.	5.23	6.41
9	W	Pharm. Soc. G.B., Council Meeting, at 11 a.m. Manchester Pharmaceutical Association. Newcastle Chemists' Association.	5.21	6.43
10	Th	Chemists' Assistants' Association at 8.30 p.m.	5.19	6.45
11	F	Royal Institution. at 9 p.m.	5.17	6.46
12	S	Rev. Rowland Hill died 1833.	5.15	6.48
13	**S**	**Second Sunday After Easter.**	5.12	6.50
14	M	Thomas Otway died 1685, born March 3, 1652.	5.10	6.52
15	Tu	◗ First Quarter, 5.26 a.m. Pharm. Soc. G. B., Library, etc., Committee. Pharm. Soc. G.B., Evening Meeting in London. Royal Institution, at 3 p.m.	5.8	6.53
16	W	Western Chemists' Association "Smoker," Pharm. Soc. G.B., Evening Meeting in Edinburgh.	5.6	6.55
17	Th	Chemical Society at 8 p.m. Chemists' Assistants' Association at 8.30 p.m. Linnean Society at 8 p.m.	5.4	6.57
18	F	Royal Institution at 9 p.m. Pereira Medal Competition.	5.2	6.58
19	S	James Addington Symonds died 1893.	5.0	7.0
20	**S**	**Third Sunday After Easter.**	4.58	7.1
21	M	Dr. Martineau born 1805, died Jan. 10, 1900.	4.56	7.3
22	Tu	○ Full Moon, 6.50 p.m. Bradford Chemists' Association, Annual Dinner. Royal Institution at 3 p.m.	4.54	7.5
23	W	J. W. M. Turner, R.A., born 1775, died Dec. 19, 1851.	4.51	7.6
24	Th	Chemists' Assistants' Association, at 8.30 p.m. Midland Pharmaceutical Association.	4.49	7.7
25	F	Royal Institution at 9 p.m.	4.48	7.9
26	S	David Hume born 1711, died Aug. 26, 1776.	4.46	7.11
27	**S**	**Fourth Sunday After Easter.**	4.44	7.13
28	M	Pitt born 1759.	4.42	7.15
29	Tu	Royal Institution at 3 p.m.	4.39	7.16
30	W	◖ Last Quarter, 10.58 p.m. Chemical Society at 5.30 p.m.	4.37	7.18

Note.—Secretaries of societies and local pharmaceutical associations are requested to send early intimation of forthcoming meetings, in order that notices may be included in this column and so prevent possible clashing of dates when arrangements are being made for other meetings. Fuller information about forthcoming meetings will usually be found in the "Diary of the Week."

NOTES IN PARLIAMENT.

Special Sanitary Officers for South Africa.—Replying to Sir W. Foster, the War Secretary has stated that three gentlemen were specially employed in August, 1900, to inquire into the origin and spread of enteric fever and other preventable diseases among the troops. They were Dr. Simpson, Col. Notter, and Major Bruce. Dr. Simpson served until November, 1901, with an interval of five months, when he was employed on plague duties. He has now gone to Hong Kong to investigate the recurrence of plague there. Colonel Notter served until October, 1901, when he returned to England. He is now acting as Principal Medical Officer at Aldershot. Major Bruce served till October, 1901. He is now serving on the Advisory Board for Medical Services. Captain Beveridge and Colonel Cooper, R.A.M.C., who were already in South Africa, were also employed on the inquiry. The recommendations of these gentlemen are being carefully carried out by the responsible medical officers on the spot.

Vaccination Experiments.—Mr. Corrie Grant has again questioned the President of the Local Government Board as to Dr. Copeman's experiments. He asked the right hon. gentleman whether he was aware that Dr. Copeman inoculated monkeys with small-pox material obtained from cases under observation during outbreaks of the disease; that he inoculated calves from the vesicles so produced on the monkeys, and inoculated a considerable number of children from the vesicles so produced on the calves, as described by himself in a paper read before the Royal Medical and Chirurgical Society on December 10, 1901; whether these experiments were conducted with the knowledge of the parents, or with the knowledge or sanction or at the expense of his department; and whether Dr. Copeman was now or had been in the employment of the Government. Mr. Long said that the answer to the first two points was in the affirmative. He was informed that a considerable number of children were vaccinated with the lymph obtained from the calves referred to, but none of the vaccinations were performed by Dr. Copeman. He had no information as to whether the experiments were conducted with the knowledge of the parents of the children vaccinated, but they were not performed with the knowledge or sanction or at the expense of the Local Government Board. Dr. Copeman, added Mr. Long, is one of the medical inspectors of the Department.

The Flash Point of Petroleum.—The Home Secretary has been asked by Mr. Tully whether he could state when he would be prepared to bring in a Bill to give effect to the recommendations of the Select Committee to raise the flash point of petroleum to 100 degrees. Mr. Ritchie said that the answer was in the negative.

Using the Royal Arms.—Many tradesmen from motives of loyalty and for purposes of advertisement display the Royal Arms on shop fronts, trade labels, paper bags, and in other ways. The Solicitor-General was, on Tuesday, asked by Mr. Knowles to say whether when tradesmen do this "without words implying that they make such assumption by authority," steps would be taken to make it clear that such persons are free from liability. The reply given was that any person using the Royal Arms without authority in connection with his business is liable to penalties if he so uses them as to lead the public to believe that he is carrying on his business by or under the authority of His Majesty, of any of the Royal Family, or of any Government Department. Whether the Royal Arms are so used in any particular case is a question of fact to be determined if proceedings are taken. The Government see no necessity for any alteration of the law.

Co-operative Societies and Income-Tax.—The Chancellor of the Exchequer was on Tuesday last asked by Sir E. Sassoon "whether co-operative societies, wholesale and retail, which supply the public in the same way as ordinary tradesmen, are exempted from income tax." Sir M. Hicks-Beach replied that there is a great deal of misapprehension on this subject; these Societies are not exempt from income tax. There is, therefore, no need for legislation.

Rats and Bubonic Plague.—There have for several months past been cases of bubonic plague at Hong Kong. These are attributed by the Legislative Council of the Colony to the prevalence of rats. Questioned on the subject by Mr. Weir, Mr. Chamberlain stated on Tuesday last that he had urged on the Colonial Government concerned the necessity of destroying rats, and that in consequence large numbers had been killed.

SOCIETY AND ASSOCIATION NEWS.

Wakefield and District Chemists' Association.—The inaugural dinner of this Association was held on Wednesday, March 19. A report of the proceedings arrived just as the Journal was going to press, hence it is held over till next week.

Bradford and District Chemists' Association.—A meeting of this Association was held on Tuesday, March 25, when Mr. A. Hanson opened a debate on "Prescribing and Dispensing." A report of the discussion is held over owing to the fact that the Journal goes to press a day earlier this week.

Cambridge Pharmaceutical Association.—At a meeting of this Association, held on Friday, March 14, Mr. A. S. Campkin, J.P., in the chair, Professor J. Reynolds Green delivered a lecture on "Flesh-Eating Plants," in the course of which he explained that both animals and plants require essentially the same food materials, and illustrated his remarks by a large number of specimens.

Newcastle Young Chemists' Association.—A meeting of this Association was held on March 19, Mr. W. Prevell in the chair, and a very interesting materia medica evening was spent, some remarkable specimens, kindly lent for the occasion by Mr. John Clark, calling forth much discussion. Amongst the samples were rhubarb root (very large), virgin scammony, kauri and damar gums, and simaruba bark.

Cardiff Chemists' Assistants' Association.—At a meeting of this Association, held on Thursday, March 13, Mr. A. B. Sparrow in the chair, Mr. H. J. Jones read a paper on the "Outlook in Pharmacy," in which he referred to the difficulties caused by the prescribing of proprietary preparations, and suggested certain directions in which the business of chemists and druggists might be developed with advantage.

Glasgow Chemists Assistants' Association.—A most successful smoking concert was given under the auspices of this Association in the Co-operative Rooms, Glasgow Cross, on Wednesday, March 19. Mr. J. P. Gilmour, who occupied the chair, appealed to assistants to support the Association more adequately, and so help it to carry forward its work on their behalf, especially in the matter of securing better conditions of service.

Newcastle Chemists' Association.—At a meeting of the Newcastle-on-Tyne and District Chemists' Association, held on Wednesday, March 12, several of the members exhibited microscopes and collections of mounted objects. During the course of the evening, Mr. T. Maltby Clague announced that he had been appointed on a committee which had been formed with the object of securing space for a botanical garden in one of the city parks, and the meeting subsequently adopted a resolution expressing approval of the efforts which were being made in the direction indicated.

School of Pharmacy Students' Association.—The last meeting of the present session was held on Friday evening, March 21, at 17, Bloomsbury Square. The attendance was not so good as usual, owing to the absence of most of the Major students, whose examination is close at hand. However, those present tackled the "Impromptu Discussions" with the same characteristic vigour which served to bring back the Inter-Pharmacy Football Cup to the Square. Mr. Harry Martin occupied the chair, and seemed very much at home in that position. The various topics chosen for discussion proved very interesting, several being old friends with new faces. The subject of apprenticeship was responsible for many personal reminiscences, whilst the division of the Minor, a compulsory curriculum, and a degree in pharmaceutics were all items which brought out many varied opinions. "Domestic" affairs also had their turn, and led to some amusing speeches. When the contents of the "hat" were exhausted, the Chairman in a few remarks said he hoped that everyone had enjoyed the evening, and indeed all the meetings that had been held during the winter. The proceedings were then brought to a close by a hearty vote of thanks to the Chairman, proposed by Mr. H. S. Phillips, seconded by Mr. Tudor Williams, and carried unanimously. Mr. Martin, in replying, said that he esteemed it an honour to have been in the chair on the last occasion that all the present students would be gathered together.

SCHOOL AND COLLEGE NEWS.

Manchester College of Pharmacy.—At the examinations recently held at this College, Mr. Richard McMyn was judged to have done the best work in the theoretical portion, and was awarded a copy of 'Pharmacopedia.' Mr. H. H. Graves secured the medal presented by an old student for the best analytical work.

London College of Chemistry, Pharmacy, and Botany.—The Materia Medica Museum has just been enriched by a collection of about fifty Indian drugs, presented by Mr. G. S. Drayton, a former student of the College, now of Bombay. The specimens are in bottles, named and described, and include the following, and many official in the Indian Pharmacopœia:—*Toddalia aculeata*, *Hydrocotyle asiatica*, *Cæsalpinia*, *Tinospora cordifolia*, *Nardostachys jatamansi*, *Andrographis paniculata*, *Terminalis chebula*, *Semecarpus anacardium*; also fine specimens of bael fruit, ripe and unripe, nux vomica fruit and seeds, mallotus fruits showing the red powder (kamala), vanilla fruits, whole bulbs of *Urginea scilla*, young shoots of *Erythroxylon coca*, samples of sugar cane, etc.

The Pharmaceutical Football Club concluded the season's fixtures with the usual annual match—Square *v.* Old Boys. It was played at Shepherd's Bush on Saturday, March 22. Although the weather in the morning was by no means promising, the afternoon turned out fine, the sun shining throughout the game. Owing to the recent rain the ground was in a very bad condition, and good football was out of the question. The Square team started with the sun and wind in their favour, and, with this advantage, were able to score two goals in the first half, whilst their opponents were unable to score. On crossing over, the "Old Boys" attacked strongly, and Cleghorn had to handle frequently. The shooting of Warren and Garsed was very good indeed. Soon, however, the "Square" began to press again, and, owing to the excellent shooting of their forwards—who, in spite of the strong defence of Owen and Northey—scored five goals in the second half, thus leaving the present team victors by 7 goals to nil. Both teams had to play one man short. Teams:—"Old Boys": W. B. Nelson (captain), H. W. Stiles, W. Owen, J. H. Northey, H. Smith, W. Hellyar, H. F. Francis, F. Addison, W. Garsed, R. B. Warren. Present Square Team: H. G. Mitchell (captain), A. G. C. Paterson, H. Martin, B. Collitt, G. R. Cleghorn, H. F. Moore, W. H. Allen, J. S. Hills, F. C. Hewlett, M. W. Stranack

Annual Smoking Concert of the "Square" F.C.—After the annual "Old Boy" match, the teams had tea together at the Bush Hotel, Shepherd's Bush, followed by a smoking concert. The chair was taken by the captain of the club, Mr. H. G. Mitchell. An excellent programme was arranged, consisting of songs, duets, musical sketches, and recitations, given by present and past-students. A recitation by Mr. Screep and a song sung by Mr. Franklin Vallet were much enjoyed. After the toast to "The King," the toast of "The Old Boys," was proposed from the chair, to which Mr. W. B. Nelson responded. Then followed the toast of the present team, which was given by Mr. Surfleet, and responded to by the Captain. The Cup of the Inter-Pharmacy League, which has been won this year by the Square team, was then passed round. The toast of "The Officers of the Club" having been given and responded to, Mr. Collitt, in a very suitable speech, proposed the health and success to the Major students present, to which Mr. H. S. Phillips responded. The evening terminated after a vote of thanks to those gentlemen who had kindly helped in the programme and the "Square Anthem" had been sung.

MARKET REPORT.

The articles quoted here have often to be sorted in order to suit the requirements of the retail pharmacist, and the quotations given are in all cases the lowest cash prices for bulk quantities. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London, Wednesday, March 26, 1902.

Business in Drugs and Chemicals has naturally been somewhat interfered with by the near approach of the Easter Holidays, but prices are, on the whole, fairly steady. Glycerin has at last been advanced. Cocaine and Santonin are being "talked up." Opium quiet, Morphine weak, Codeine firm. Acetanilide, Phenacetin, and Sulphonal very dull. Acid Citric, Acid Tartaric, and Cream of Tartar quiet. Cod Liver Oil decidedly dearer. Shellac steady. Sulphate of Ammonia dearer. Acid Carbolic quiet. Bromides firm, as also are Mercurials and Quicksilver. Iodides unchanged. Quinine lifeless, but without change in price. Menthol and Thymol tending lower. The following are the ruling quotations for some articles of principal interest:—

ACETANILIDE.—Continues dull and weak at 8d. to 9d. per lb., according to quantity and make.

ACID BORACIC.—Crystals, 22s. per cwt. Powder, 24s.

ACID CARBOLIC—Quiet, but steady, on basis of 7d. per lb. for 34—35° ice-crystal, for quantity and in bulk packing.

ACID CITRIC—Quiet at 1s. 0½d. to 1s. 1d. per lb. for crystals in 5cwt. casks.

ACID TARTARIC—Very quiet at 11¼d. to 11½d. per lb. for English on the spot and 10½d. per lb.

ALUM.—Lump £5 10s. to £5 12s. 6d., and ground £6.

ATROPINE.—Price is unchanged at 16s. 8d. per oz. for the Sulphate, and 19s. 3d. per oz. for the pure alkaloid.

BENZOLE.—50 per cent. prompt 8d., 90 per cent. 9d. London.

BICARBONATE OF SODA.—Landed £7 5s

BICHROMATE OF POTASH.—3d.

BICHROMATE OF SODA.—2¼d.

BORAX—Crystals, 13s. per cwt. Powder, 14s.

BROMIDES—Are firm and in good demand at 1s. 11½d. per lb. for potassii bromid, 2s. 2½d. per lb. for sodii bromid, 2s. 3d. per lb. for ammonii bromid. Bromine is quoted 2s. 2d. to 2s. 4d. per lb., according to quantity.

CAFFEINE.—Makers quote 12s. to 12s. 6d. per lb., according to quantity, for the pure alkaloid and 8s. 6d. to 8s. 9d. per lb. for the citrate B.P.

CAMPHOR—Is firm at late advance to 2s. 3½d. per lb. for bells and flowers.

CAUSTIC SODA.—70 per cent. white £10 10s., 60 per cent. £1 less.

CHLORATE OF POTASH.—Spot London crystals 3d. to 3¼d. net, powder 3d. to 3¼d.

COCAINE.—Makers still quote 17s. 9d. to 18s. 3d. per oz., according to quantity, for the hydrochlorate in 25 oz. tins, the idea being, however, current that we may probably see an advance in price in the immediate future, on account of high price asked for the crude article.

CODEINE—Is unchanged at 12s. 3d. to 12s. 6d. per oz. for the pure alkaloid according to quantity, the salts being quoted at usual difference.

COD LIVER OIL—Market, on reports of lean livers and other scare reports from the fishing districts, shows a further rise, and the agents for the refiners now quote 100s. to 105s. per barrel, and are very firm even at these advanced figures. In view of the fact that many buyers are believed not to have yet covered their season's requirements, it would appear probable that sellers will get their own way for the moment, but the question is whether prices will be maintained, there being talk of Newfoundland oil coming into consumption.

COPPER SULPHATE.—English is lower at £18 10s. to £19 10s. per ton, according to quantity and make.

CREAM OF TARTAR.—First white cyrstals on spot 70s., powder 72s., 98 per cent. foreign powder 73s. 6d.

ESERINE (PHYSOSTIGMINE)—Makers still quote 4s. 6d. to 5s. per gramme, according to quantity, for the Sulphate and Salicylate Salt, and 5s. 6d. to 6s. per gramme for the pure alkaloid.

EXTRACT FILICIS MARIS (OIL OF MALE FERN).—Competition amongst the makers has driven price down to 4s. 3d. per lb. for quantity and bulk packing.

GLYCERIN.—At last the long-anticipated advance in price of refined has taken place to the extent of £4 per ton, quotation now being £67 per ton for five-ton contracts for best white odourless, double-distilled, chemically pure 1·260 S.G. quality in tins and cases (2 or 4×56 lb. tins in a case). It is thought that a further advance is not improbable.

IODIDES.—So far the combined makers made no change in their prices, which remain as follows:—Potassii iodid., 8s. 9d. per lb., sodii iodid., 9s. 10d. per lb., ammon. iodid., 12s. 6d. per lb., iodoform, crystals, powder, or precipitated, 11s. 8d. per lb., iodine resublimed, 10s. per lb., and commercial iodine, 6d. per oz.

LITHIA SALTS—Are weak. German makers still quote 6s. 4d. per lb. for the Carbonate and 4s. 6d. per lb. for the Citrate Cryst. for 2cwt. lots, but there are outside sellers at rather cheaper rates.

MENTHOL.—Quiet, at 13s. 6d. to 13s. 9d. per lb for Kobayashi brand in 5 lb. tins.

MERCURIALS—Are firm, it being stated that there is an active demand for corrosive sublimate as a consequence of the reported reappearance of the plague in Bombay. Quotations are, however, still unchanged at 3s. 0½d. per lb. for calomel, 2s. 8½d. per lb. for corrosive sublimate, 3s. 4½d. per lb. for red precipitate, and 3s. 7d. per lb. for white precipitate.

MORPHINE.—Manufacturers quote 4s. 3d. per oz. for the hydrochlorate powder for contracts.

OPIUM.—There is practically no business passing, except in Persian at 8s. 9d. per lb. for dark, and at 9s. 3d. per lb. for fine pale paste. Quotations for other kinds are nominally fine. Druggists 9s. per lb., ordinary current qualities 7s. 9d. to 8s. 6d. Of soft shipping qualities there is very little available, the high price of 15s. per lb. being asked.

PILOCARPINE—Maintains its high price, makers quoting 76s. per oz. for 1oz. lots.

PHENACETIN.—The combined makers still quote 4s. 3d. to 4s. 9d. per lb., according to quantity, for both crystals and powder.

PRUSSIATE OF POTASH.—English makes 5⅜d. Beckton 5d.

QUICKSILVER—Is unchanged at £8,15s. per bottle from the importer. Nothing offering from second hand.

QUININE.—Market is very quiet, partly in consequence of the approaching Easter Holidays, and partly owing to the fact that people are now generally awaiting, first, advice as to total shipments of bark from Java during March, and secondly the result of next Amsterdam bark sales. If the shipments of bark prove reasonably moderate then the bark sales will probably go at an advanced figure, which will apparently inevitably mean an advance in price of quinine. Makers are firm at 1s. 2½d. per oz. for the sulphate, while from second hand it would probably be possible to buy at ½d. per oz. less money.

SALICINE—Is unchanged at 15s. to 15s. 6d. per lb., according to quantity.

SALOL.—Makers still quote 2s. 3d. per lb., with a small discount, according to quantity, for contracts.

SANTONINE.—Price is so far unchanged at 16s. 9d. to 18s. per lb., according to quantity. It is, however, stated on what should be competent authority that a further advance in price is not improbable.

SODA.—Crystals, barrels quoted 65s., bags 62s. 6d.

STRYCHNINE—Is quiet and weak, owing, it is believed, to continued American competition. The English makers quote 1s. 10½d. per oz. for the crystal alkaloid in quantity and the salts in proportion.

SULPHATE OF AMMONIA—Strong and advancing. Gray 24 per cent. London prompt £12. Hull prompt £11 15s. to £11 16s. 3d. Leith prompt £11 17s. 6d. Beckton prompt £11 15s., May-June £11 12s. 6d. Beckton terms prompt £11 12s. 6d. to £11 13s. 9d.

THYMOL.—There are sellers at 7s. 6d. to 7s. 9d. per lb. for quantity.

DISSOLVED . . HAEMOGLOBIN CAPSULOIDS

THE LANCET of August 11th, 1899, says:—

"The administration of Iron in this form is satisfactory. To not a few the appearance of Haemoglobin is repulsive. Capsuloids meet this objection, and evident care is devoted to their preparation."

CAPSULOIDS are so largely prescribed by Physicians

BECAUSE—They contain only pure dissolved Haemoglobin scientifically extracted from carefully selected fresh blood.

BECAUSE—They never produce the slightest nausea, like most Haemoglobin mixtures and powders, are pleasing to the eye, and easily swallowed even by young children, and furnish exact doses.

BECAUSE—Anæmia and chlorosis, and all similar conditions of blood, are rapidly cured by taking them.

Capsuloids are sold in boxes for dispensing only.

THE CAPSULOID COMPANY, 31, SNOW HILL, LONDON.

BUY FROM THE DIRECT IMPORTERS

SPONGES

FOR CHEMISTS' TRADE.

I. & M. COHEN

Sponge Merchants, Importers and Exporters,

Contractors to H.M. Government,

35 & 54, HOUNDSDITCH, & 66, ST. MARY AXE

LONDON, E.C.

Every Description always on hand.

TRADE NOTES AND NOVELTIES.

Messrs. Parke, Davis, and Company announce that their offices, warehouses, and laboratories will be closed from Thursday evening, March 27, until Tuesday morning, April 1. A few members of the staff, however, will be in attendance each day to deal with urgent orders for serum, etc.

Carbon Printing Competition.—Messrs. Thomas Illingworth and Co., Limited, The Photo Works, Willesden Junction, N.W., are arranging for a carbon printing competition, open to professionals and amateurs, prizes to the value of £100 being offered. An entry form and particulars as to conditions, etc., will be forwarded to any photographer on application being made to the firm.

Photographic Catalogue.—Messrs. James Woolley, Sons and Co., Limited, Victoria Bridge, Manchester, have just published their new photographic catalogue for 1902. It contains over 160 pages, giving particulars of many novelties, in addition to information concerning their well-known "Victoria" outfits and hand cameras. A copy of the catalogue will be forwarded free to any applicant on mentioning the *P.J.*

New Soloids. Messrs. Burroughs Wellcome and Co. are introducing Sodium Hydroxide Soloids, gr. 2 (0·13 Gm.), and Pyrogallic Acid Soloids, gr. ½ (0·032 Gm.), with the view of providing a ready means of estimating the degree of oxygenation of a sewage effluent. The examination is conducted in the following manner:—Fill a wide-mouthed bottle, holding about four ounces, with the effluent as it runs from the beds, drop in one "Soloid" product of each reagent, and insert the stopper carefully and in such a way as not to include any bubble of air. Shake the bottle for about half a minute and note the effect produced. If the liquid remain colourless or only faintly coloured, the oxygenation is not satisfactory. If the liquid assume a rich red-brown colour, the oxygenation is satisfactory. The new Soloids are each issued in bottles containing twenty-five.

PERSONALITIES, BUSINESS CHANGES, ETC.

Readers are requested to send items of local news of general pharmaceutical interest. When newspapers are sent, the passages of interest should be marked.

Mr. C. E. Franklin Vallet, lately lecturer at the London College, has acquired the business carried on for the last fourteen years by Mr. W. Austin Sinclair, at 8, Belsize Park Terrace, Hampstead.

Mr. Wilfrid Wilson Gibson, the author of a collection of verse published in Elkin Mathew's Shilling Vigo Cabinet Series under the title "Urlyn the Harper and Other Songs," is the younger son of Mr. J. P. Gibson, chemist, Hexham, and brother of Mr. John Gibson, F.C.S., Divisional Secretary for Hexham.

PUBLICATIONS RECEIVED.

A Treatise on Pharmacy for Students and Pharmacists. By Charles Caspari, Jun., Ph.G. Second Edition, revised and enlarged. Pp. 776, with 301 wood-cuts and a portrait plate. Price, 19s. net. London: Henry Kimpton. 1902. From the publisher.

Revue des Médicaments Nouveaux et de Quelques Médications Nouvelles. Par C. Crinon. 9e Edition. Pp. 425. Prix, 4 francs. Paris: M. Rueff, Éditeur, 106, Boulevard Saint-Germain. 1902. From the Editor.

Life. No. 1, Vol. 1, January, 1902. The journal of "Our Society." Founded for mutual encouragement in scientific study and its applications to life and thought. Pp. 28. Price 1s. London: "Our Society," 7, Craven Hill Gardens, Lancaster Gate, W. From the Secretary.

Die Rohstoffe des Pflanzenreiches, Versuch Einer Technischen, Rohstofflehre des Pflanzenreiches. By Dr. Julius Wiesner. 8 Lieferung (Bd. 11, Bogen 21-30). Mit Textfigur 45-75. Pp. 320-480. Preis M. 5. Leipzig: Wilhelm Englemann. 1902. From the Publisher.

Photographic Apparatus: Making and Repairing. By Fred W. Cooper, D. W. Gawn, and others. Edited by George E. Brown, F.I.C. Pp. 128. Price 1s. net. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. 1902. From the Publishers.

Kryptogamen—Flora, Moose, Algen, Flechten, und Pilze. By Professor Dr. Walter Migula. Parts 2, 3 and 4. Price 1M. each part. Gera, Reuss, J.L.: Friedrich von Zezschwitz. 1902. From the Publisher.

A Text-Book of Elementary Botany. By Charlotte L. Laurie, with illustrations by W. L. Boys-Smith. Pp. ix. + 142. Price 2s. 6d. London: Allman and Son, Limited, 67, New Oxford Street, W.C. From the Author.

Notices to Correspondents.

All Communications for the 'Pharmaceutical Journal' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street Lincoln's Inn, London.

Contributions sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

Correspondents should write in ink, on one side of the paper only, and must authenticate the matter sent with their names and addresses, though not necessarily for publication. No notice can be taken of anonymous communications.

Drawings for Illustrations should be executed twice the desired size, clean sharp lines being drawn with a pen and liquid Chinese ink. Shading by washes is inadmissible. Photographs can be utilised in certain cases.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Baker, Brown, Cowdery, Crossley, Cummings, Dunlop, Emary, Gilmour, Harper, Heays, Hill, Hines, Illingworth, Leeney, Le Fevre, Ling, Maben, Mumbray, Munro, Murray, Newton, Picken, Philp, Robinson, Sinclair, Tukes, Turner, Usher, Woolley, Wootton, Wyatt.

Pharmaceutical Journal

SATURDAY, APRIL 5, 1902.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

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Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

DISPENSER, qualified (outdoor); salary, £2 5s. per week.—State age, experience, and enclose photo, to WAND, Haymarket, Leicester.

WANTED, an ASSISTANT for a town in Essex.—State full particulars, with salary (indoor), to SENIOR, c/o Barron, Harveys & Co., Giltspur St., E.C.

LONDON (Suburb),-S.W.—Junior ASSISTANT for select Dispensing and Retail business; indoors.—CHEMICUS, Messrs. Barron, Harveys, Giltspur St., E.C.

LONDON, N.W.—Outdoor ASSISTANT, about 23.—Full particulars of age, height, experience, when disengaged, and salary, to W. C. FORD, 130, Camden Rd., London, N.W.

WANTED, IMPROVER; youth just out of his time would suit; outdoors; no Sunday duty.—Apply, by letter, to X. Y. Z., c/o Maw, Son & Sons, Aldersgate St., London.

WANTED, qualified ASSISTANT (Lady or Gentleman), for light Retail, Dispensing and Photographic business; indoors.—ERIC LEMMON, Pharmacist, 47, High St., Exeter.

WANTED, immediately, competent ASSISTANT, also JUNIOR, accustomed first-class Retail and Dispensing and Photographic trade.—Full particulars, with carte, to THOMAS, Chemist, Oxford.

QUALIFIED ASSISTANT required at once by a large West-end firm; must have good general experience and be an accurate Dispenser.—Apply by letter to S., c/o Street's, Serle St., Lincoln's Inn.

CLERK-ASSISTANT for high-class Retail business, South Coast; principal work book-keeping; good writing essential; comfortable home.—State salary (indoor) to BOURNE, c/o Barron, Harveys, Giltspur St., E.C.

ESHER.—JUNIOR required at once for good class Dispensing business near London; two hours daily allowed for reading; Sunday duty nominal.—Apply, with full particulars and carte, to CHAPMAN, Chemist, Esher, Surrey.

Assistants Wanted—Continued

JUNIOR ASSISTANT (indoor); experienced in high-class Dispensing.—Full particulars of age, height, experience, and salary required, with photo if possible, to T. E. HANDFORD, Pharm. Chemist, Station Bridge, Harrogate.

LUTON.—JUNIOR or IMPROVER, for light Retail; knowledge of Photography preferred; state age, height, experience, salary; indoors; photo if possible; half-holiday weekly; no Sunday duty.—COCKER, Ph. Chemist, Luton, Beds.

GOOD JUNIOR wanted, not under 22, accustomed to high-class Dispensing and Retail; indoors; abstainer preferred.—State experience, salary required, and enclose photo, or apply personally, R. H. PARKER, 35, Clifton Rd., Maida Vale, W.

WANTED, an active, energetic ASSISTANT to manage and develop a branch business in a growing neighbourhood; unfurnished house; good salary to an enterprising man.—Apply, with photo, to G. COVERDALE, Chemist, 23, Parliament St., York.

CHEPSTOW.—Wanted, IMPROVER or JUNIOR in a light Retail and Dispensing business; also an APPRENTICE; outdoors; easy hours; half-holiday weekly; no Sunday duty.—Apply, with full particulars and photo, CLARKE, Chemist, Chepstow.

QUALIFIED ASSISTANT.—A capable and energetic man, accustomed to high-class Dispensing and Retail trade.—Apply by letter, stating particulars of age, height, and experience, to WALLAS & Co., 9, Great Marylebone St., Cavendish Sq., W.

QUALIFIED married ASSISTANT wanted to live over shop, preference given to young man with experience of good-class business desiring a permanency. References must bear strict investigation. Moderate salary; furnished house.—SOUTH COAST, Pharm. Journal Office, 8, Serle St., W.C.

CAPE COLONY.—Wanted, qualified ASSISTANT, of good experience and having undeniable references; aged about 23; salary, 1st year, £12 per month; 2nd year, £13 per month; 3rd year, £14 per month; sleeping accommodation provided; second-class passage paid out; 3 years' agreement.—Apply, COLONY, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

A Copy of this Inset is inserted in every *Pharmaceutical Journal* issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at the Publishing Office, 8, Serle St., London, W.C., and at more than two hundred addresses in the United Kingdom; a list of these addresses will be found on page 16.

Assistants Wanted—Continued.

A Copy of this Inset will be forwarded gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at more than two hundred addresses in the United Kingdom; a list of these will be found on page 16.

CALCUTTA.—Wanted at once, a qualified Assistant; age about 24 years; must be able to conduct analysis; first-class opening for a competent man. Salary, 1st year, 275 Rs. per month; 2nd year, 300 Rs. per month; 3rd year, 325 Rs. per month, and 4th year, 350 Rs. 4 years' agreement. Second class passage paid both ways.—Apply by letter to Calcutta, c/o Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

WANTED at Hastings an experienced Dispenser; well used to light class counter trade; a permanency if suitable; the business is done in separate departments as light Retail and Dispensing, Surgical Instruments and Appliances, Ophthalmic Optics, Amateur Photographics.—State salary, duration of last two situations, etc., to J. Griffiths Richards, Chemist, Hastings.

FINSBURY DISPENSARY, Brewer St., Goswell Rd., E.C. —Dispenser wanted; salary, £55; hours of attendance, 11.30 a.m. to 3.30 p.m. daily (Sundays and Bank Holidays excepted); must possess the Major or Minor qualification; duties begin on April 25 next.—Applications, with testimonials, to be sent before April 15, to W. H. Pratt, Secretary, at the Dispensary.

INDIA (N.W. Province).—Wanted, a good Assistant, well up in all branches of a Chemist's business; Minor qualification. Salary, 1st year 150 rupees per month, 2nd year 175 rupees per month, 3rd year 200 rupees per month; free furnished apartments; second-class passage paid out; required to start early in April; candidates must hold undeniable references.—Address, India, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CHINA.—Wanted, an Assistant who has been accustomed to first-class Retail and Dispensing business; qualification by examination desirable but not essential; four years' agreement; passage paid out and home; salary, £14 to £16 per month according to qualification, and rising to £17 to £19 per month; free quarters.—Address, China, 64, Crutched Friars, E.C.

CAPE COLONY.—Wanted, good Assistant, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £150; second year, £160; third year, £170; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, Cape, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

SANITARY INSPECTORSHIPS.—Salaries £100 to £250. Numerous vacancies. Permanent appointments. Chemists or Assistants desiring change of occupation should qualify as Sanitary Inspectors. Special Postal Course of Lessons now commencing for London, Liverpool, Leeds, Cardiff, Manchester, Leicester, Newcastle-on-Tyne and Belfast exams. Anyone of average ability can pass. Had over 250 successful candidates, and fully half had no previous knowledge of sanitary matters.—Apply, Robert H. Mushens, Sanitary Science Teacher, Sunderland.

STRAITS SETTLEMENTS.—Good opportunity for qualified Assistant; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to Straits Settlements, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

Apprentice

H. B. SHARMAN, Chemist, Northwood, has a vacancy for a well-educated, gentlemanly Youth; outdoors preferred, in which case no premium would be charged; high-class Dispensing and Retail; facilities for study; references given to parents or guardians; an Improver not objected to.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM; engagement for three or four weeks.—Birch, Morecambe.

LOCUM; qualified; 26; disengaged.—Wright, Chapel St., Leigh, Lancs.

LOCUM; qualified; abstainer.—E. Kemp, 11, Cheapside, St. Leonards-on-Sea.

LOCUM, M.P.S.; town or country; disengaged.—W. Smith, 12, Westfield Rd., Surbiton.

ASSISTANT; qualified; good general experience; speaking French; disengaged.—Eyre, 8, Derby St., W.C.

ASSISTANT, Branch or Locum; qualified; experienced Prescriber, Extractor.—399, Stanley Rd., Liverpool.

MANAGER; qualified; 33; married; good Dispensing experience.—Thompson, 72, Ledsam St., Birmingham.

SENIOR, Manager or Locum; good London experience; qualified; 29.—Green, 23, Eddiscombe Rd., Fulham, S.W.

QUALIFIED; 28; varied experience; permanency; disengaged.—Chemist, 8, Derby St., London, W.C.

MANAGER, Senior, temporary or otherwise; qualified; nearly 14 years in last situation.—Pharmacist, 107a, Aslett St., S.W.

QUALIFIED; 7 years' good general with first-class West-end Dispensing experience.—H. M. Marcoolyn, King St., Ramsgate.

AS Surgery Attendant, Dispenser and Book-keeper; age 50; qualified; outdoor; good references.—Address, Chemist, 30, Matthias Rd., Stoke Newington, London, N.

DISPENSER and Book-keeper to Surgeon, Chemist, Dispensary or Institution; mornings, evenings; part time or otherwise; qualified; experienced; excellent references. —Salicine, 8, Serle St., W.C.

MANAGER; qualified; 29; first-class Retail and Dispensing experience; London and provincial; Photography; permanency; South Coast or Eastern counties preferred.—Chemist, 32, High St., Sevenoaks.

LOCUM, Branch Manager or Senior; qualified; 37; store experience and West-end; Extractor, Prescriber, and knowledge of Photography; excellent references; disengaged.—Statim, 140, Kennington Park Rd.

TEMPORARY or permanent engagement wanted; London only; thorough experience; Dispensing, Photography; many years' management; qualified; married; 39; undeniable references.—Visitor, 3, Duncan Rd., Richmond.

MANAGER.—A Pharmaceutical Chemist of experience (married; abstainer) desires an appointment of a permanent character as Manager or Senior Assistant in a town or health resort (outdoor); highest references given.—Address, with particulars, Apenta, Pharm. Journal Office, 8, Serle St., W.C.

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows:—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

PRESCRIBING and General Business and premises, consisting of shop, large room and cellar, with dwelling-house (let off); North-East district; an excellent position for Prescriber and Extractor; large profits; business been neglected; satisfactory reason for disposal.—Apply, Medicus, Pharm. Journal Office, 8, Serle St., London, W.C.

FOR SALE.—Old-established Prescribing, Dispensing and Retail Business; thriving town and rapidly increasing neighbourhood on South Coast; prominent position in main thoroughfare; large shop; proprietor retiring; good scope for an energetic man; particulars to *bonâ-fide* purchaser.—Apply to South, c/o Messrs. Barclay & Sons, 95, Farringdon St., E.C.

WEST-END.—£4,000.—A Dispensing Business, of the highest possible character, producing a net profit of £1,000 per annum, which in the hands of two energetic men, could be doubled; will be sold by lump sum, or small goodwill and valuation of stock and fixtures; bankers' or other references required.—Apply, Messrs. Berdoe & Co., Valuers, 35, Jewry St., Fenchurch St., City.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

100 Meggeson Ordinary, 24s. 6d. cd. 20 Preference 101s. cd. 50 G. B. Kent Preference, 21s. 3d.—O., 39, Quentin Rd., Lee, S.E.

OFFERED.

Dental Chair; good condition; price 90s.—Dentalis, 7, Osborne Terrace, Landport.

"**Pharmacopœias** of the London Hospitals," 1891, Squire; what offers?—Gowen, Fleet, Hants.

Photographic Mounts. 2,500 cabinets, 25s.; 2,000 C.D.V.'s, 7s. 6d. to clear.—Edward Peck, East Dereham.

About 60 lbs. Honey, from own bees, in 1 lb. glass jars.—Offers for whole or part to Jesson, North Kilworth, Rugby.

100 Ilford Ordinary, 26s. 9d. 100 6 per cent. Preference, 22s. 100 Idris A Ordinary, 25s. 9d.—M., 30, Tranquil Vale, Blackheath, S.E.

Bicycle for Sale.—26-inch Eddystone Pneumatic; flat bar; 63 gear; as good as new; light roadster; rubber pedals; price £6.—Salol, 8, Serle St., W.C.

African Curios, Weapons, Skins, Photos Battlefields for cash; Information about Employment, Shares, Mining, 2s. 6d.—James Frederick Janssen, Expert, Durban, Africa.

35s. Bracher's Desideratum Mixer C. for 18s.; 26s. Fulton's Sign and Price Marker—Spacing Rule—Guide, 15s.; 7 × 13½, Munyon's Remedies, 4s.; 3 × 13½, Ibis Toothache Cure, 1s. 6d.; 2 × 4/6 Nicholl's Mayhatine Pills, 6s. 5d.; 2 × 13½ Tic Sand, 1s.—Nux, 8, Serle St., London, W.C.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., Chemists' Transfer Agents, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

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OF THE MEMBERS OF

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AND THEIR FRIENDS

Will be held on Tuesday, May 27, 1902, at the Whitehall Rooms, Hôtel Métropole, at 7 o'clock.

Tickets, One Guinea each (including wine), can only be obtained from the Honorary Secretary to the Dinner Committee, 17, Bloomsbury Square, W.C.

A full list of Stewards will be published shortly.

COUNCIL EXAMINATION PRIZES.

April, 1902.

Pharmaceutical Chemists who were Members of the Society at the time of passing the Major Examination are entitled to compete for the following prizes at the competition next following the date on which they passed the Major Examination :—

First Prize.—Pereira Medal in silver, and a present of books value £5, or thereabouts, given by the late Thomas Hyde Hills in memory of Jacob Bell.

Second Prize.—The Pharmaceutical Society's Medal in silver.

Third Prize.—The Pharmaceutical Society's Medal in bronze.

Subjects of Examination—Materia Medica; Botany; and Chemistry.

The next competition takes place on Friday, April 18, and no person will be admitted to compete unless he shall have given notice of his intention to the Secretary on or before Monday, April 14.

The Examination is a written one, and competitors may be examined in London or in Edinburgh.

COMPANY INTELLIGENCE.

Meggeson and Company, Limited.—We are informed that warrants for the half-yearly interest on debentures and preference shares and an interim dividend on the ordinary shares were posted to the shareholders on April 1.

Central London Drug Stores, Limited.—This company was registered on March 15, with a capital of £2,000, in £1 shares, to acquire the business of the Central Drug Stores, as now carried on at 55, Commercial Road, Mile End, and to adopt an agreement with M. M. Bernstein, and, generally, to carry on business as chemists and druggists, oil and colour men, importers and manufacturers of and dealers in and agents for pharmaceutical, medical, chemical, industrial, photographic, and other preparations. No initial public issue. Sole director, M. M. Bernstein; any subsequent directors to be appointed by him. Qualification, 25 shares. Remuneration to be fixed by the company.

Star Mineral Water Company, Limited.—This company was registered on March 18, with a capital of £5,000, in £1 shares, to adopt agreements with W. T. London and Co., Sidney Holden, and G. Arrowsmith and Co. of the one part, and Sidney Brown, for the company, of the other part; to carry on business as manufacturers of and dealers in aerated and medicinal waters, wholesale and manufacturing chemists, and dealers in drugs, etc. No initial public issue. The directors are S. Holden, G. H. Goldfinch, J. W. Gillies, G. W. T. Arrowsmith, and A. C. Child. Qualification, £100. Remuneration, 10s. each for each board attendance. Registered office, 63, Oxford Street, Manchester.

Charles Patchett, Limited.—This company was registered on March 20, with a capital of £3,000, in £1 shares, to acquire the business of a draper and haberdasher as hitherto carried on at 9 and 11, Old Market Place, Grimsby; also to carry on business as silk mercers and weavers, cotton spinners, dealers in produce and materials, provisions of all kinds; as tailors, hatters, clothiers, dealers in fancy goods; as boot and shoe makers, chemists and druggists, builders and contractors, coach builders, general engineers, land, estate, and house agents, hardware manufacturers and dealers, cycle makers, licensed victuallers, wine and spirit merchants, mineral water manufacturers and dealers, farmers, market gardeners, etc. Life governing director, Thomas Bascomb; ordinary directors, T. W. Bascomb, W. H. Bascomb, and C. R. Bascomb. No qualification or remuneration specified. Registered office: 9 and 11, Old Market Place, Great Grimsby.

SOCIETY AND ASSOCIATION NEWS.

Chemists' Managers' and Assistants' Society.—A meeting of this Society was held at the Horse Shoe Hotel, Tottenham Court Road, London, on March 26, when Mr. Pickering took the chair, and Mr. Cullwick read a paper on "Chemists' Prices, Old and New."

Public and Poor-Law Dispensers' Association.—A meeting of this Association was held on March 26 at St. Bride's Institute, Ludgate Circus, London, when it was decided to alter its name to the "Public Dispensers' Association." Several alterations in the prospectus of the Association were also proposed and carried.

Rossendale Natural History Society.—On Tuesday, March 25, Mr. J. E. Lord, M.P.S., of Rawtenstall, delivered an address on Prof. Abbe's theory of microscopic vision before the Rawtenstall Natural History Society. He showed how the theory had led up to considerable improvements, primarily on the optical, but also as a consequence on the mechanical side of the instrument. After a description of the new lenses, and their points of superiority over the old achromatics, he gave a demonstration of their performance, using a 1-6in. dry and a 1-12in. homogeneous immersion, showing the secondary structure of diatoms in a most brilliant manner. Finally, as a proof that wide-angled lenses were equally good for histological subjects, he displayed living bacteria, and the circulation of the protoplasm in the leaf-cells of *Elodea canadensis*.

MARKET REPORT.

The articles quoted here have often to be sorted in order to suit the requirements of the retail pharmacist, and the quotations given are in all cases the lowest cash prices for bulk quantities. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London, Thursday, April 3, 1902.

Business in Drugs and Chemicals, as also generally, has hardly resumed its usual course after the holidays, and things generally continue very quiet. Beyond a tendency towards an advance in price of Quinine and continued advance in price asked for Codliver Oil, there are no changes of any importance to record. We give some prices and details below.

ACID CARBOLIC—Is quiet and unchanged at 6½d. to 7d. per lb., according to make and quantity, for 34-35° ice crystal in large bulk packing, 7¼d. to 7½d. per lb. for the 39-40° ice crystal, and 8¼d. to 8¾d. per lb. for the 39-40° B.P. quality, in detached crystals. Crude, 60° F., 1s. 11d. per gallon; ditto, 75° F., 2s. 6d. per gallon. Liquid, 95 to 97 per cent. of pale straw colour, 1s. to 1s. 3d. per gallon, according to quantity, in 40 gallon casks; ditto, 25 to 30 per cent. of dark colour, 7d. to 9d. per gallon.

CAMPHOR.—Crude is very quiet, and Japan for arrival offers at 150s. per cwt., c.i.f., for near at hand, and at 145s. per cwt. for April-May steamer shipment, there being, however, no buyers at these figures. The monopoly prices of Formosa are unchanged at 165s. per cwt., c.i.f., and at 185s. per cwt. for pressed. English refined is unchanged at 2s. 3½d. per lb. for Bells and Flowers.

CINCHONA BARK.—The shipments of Java during March were 680,000 Amsterdam lb. against 864,000 Amsterdam lb. last year, and 650,000 Amsterdam lb. in 1900. The total for the three months is 2,110,000 Amsterdam lb., against 2,591,000 Amsterdam lb. last year, and 1,894,000 Amsterdam lb. in 1900. At to-day's Bark Sales in Amsterdam, at which the equivalent of about 32 tons of Quinine Sulphate come under the hammer, price opened at about 5 per cent. advance on average price of the previous Amsterdam sale, viz., 8·25 cents, as against 7·95 cents per unit. It is expected, however, that the average price will be tangibly above 8·25 cents.

COAL TAR DISTILLATION PRODUCTS.—Toluol, commercial, 10d. per gallon; ditto, pure, 6d. per lb. Benzole, 50 per cent., 7½d. per gallon; ditto, 90 per cent., 8¾d. Creosote, 1⅝d. to 3½d. per gallon, according to quantity, packing, and delivery. Crude Naphtha, 30 per cent. at 120° C., 4d. per gallon. Solvent Naphtha, 95 per cent. at 160° C., 1s. 4d. per gallon. Anthracene A, 2¼d. per unit. Pitch, 42s. per ton f.o.b. Tar, refined and or crude, 12s. 6d. per barrel, 2½d. per gallon.

COD LIVER OIL.—Based on continued reports of bad yield of the fishings, the agents here for the refiners continue to ask extravagant prices up to 110s. per barrel for best brands of new non-congealing Norwegian oil; buyers, however, do not appear to be "taking any" at these exorbitant figures, or, at least, only exceptionally, and for quite immediate pressing wants. In view of fact that chief consuming season will be over shortly, it hardly looks as if prices can be maintained.

CODEINE—Is firm and unchanged.

ESSENTIAL OILS—Are dull; prices, however, show no quotable change. Peppermint: American HGH now quoted 8s. 10½d. to 9s., H&P 8s., JBH first premium 7s. 9d., and JBH pure 7s. 3d. Japan dementholised neglected at 4s. for Kobayashi, and 40 per cent. 7s. 6d. to 7s. 9d. Star Aniseed has been quiet and unchanged at 4s. 4½d. Cassia neglected, and prices nominal in the absence of business. Citronelle steady at 10½d. in cases and 9¾d. in drums. Lemongrass steady, with further small sales at 6d.

GLYCERIN.—Crude continues firm, while for the refined article there is talk of a further advance in price; so far, however, there is no change, best white colourless, double-distilled, chemically pure, 1,260 S.G. quality, in tins and cases, being still quoted 67s. per cwt. for 5-ton contracts, smaller quantity being quoted higher in proportion.

MENTHOL.—Market is weaker, and Kobayashi crystals can be bought at 13s. 3d. to 13s. 9d. per lb., according to quantity.

MORPHINE—Remains very quiet at nominally unchanged prices.

OILS (FIXED) AND SPIRITS.—Linseed Oil firm, and fully 5s. dearer forward. London spot pipes, £29 15s.; barrels, £29 15s. to £30; month, £29 10s.; May-August, £28 15s. to £29; September-December, £27 15s.; Hull naked spot, £28; May-August, £28. Rape Oil quiet: Ordinary brown on the spot, barrels, £26; April, £26; English refined spot, £27 5s.; Ravison naked spot, £24 10s.; April, £24 10s. Cotton Oil steady: London crude spot, £23; May-August, £23 10s.; refined spot, £24 15s. to £25 10s.; Hull naked refined spot, £23 2s. 6d.; May-August, £23 12s. 6d.; November-April, £20 12s. 6d.; crude spot, £22; May-August, £22 7s. 6d.; November-April, £19 10s. Olive Oil: Mogador, £33 to £34; Spanish, £34 to £36, as to quality; Levant, £33 to £34. Cocoanut Oil steady: Ceylon spot, £32 to £32 10s.; April-May, £28 10s., c.i.f.; April-June, £28 5s., c.i.f.; May-July, £28, c.i.f.; Cochin spot, £37; April-May, £31 15s., c.i.f. Palm Oil: Lagos on the spot, £27. Castor Oil easier: Belgian spot, firsts, £26; seconds, £25; July-December, firsts, £24 15s.; seconds, £23 15s., barrels free, ex-wharf, London, 2½ per cent. discount. Hull made, guaranteed pure, July-October or July-December deliveries (equal monthly quantities), firsts, £25 per ton; seconds, £24 per ton, in barrels, delivered free, ex-wharf, London, less 2½ per cent. discount. French, medicinal sun-bleached, £31 10s. per ton; first pressings, £29 per ton; second, £28 per ton, barrels free, ex London wharf, 2½ per cent. discount. Turpentine strong: American spot, 30s. 9d.; May-August, 31s.; September-December, 31s. 7½d. to 31s. 9d.; January-April, 32s. 3d. to 32s. 6d. Petroleum Oil dull: Russian spot quoted 5⅞d. to 6⅜d.; American spot, 6⅞d. to 7d.; water white, 7¾d. to 8d.; refined Roumanian on spot, 5⅞d. to 6d.

OPIUM.—In Smyrna about 60 cases have changed hands at 7s. 4d. to 7s. 8d. per lb. Here there is practically nothing doing except in Persian, which continues in fair demand in spite of free arrivals, prices ruling at 9s. to 9s. 6d. per lb., according to quality.

QUININE.—Market remains quiet and undecided pending result of to-day's Bark sales in Amsterdam, final results of which were not known at time of going to press. Makers still quote 1s. 2½d. per oz. for B&S Sulphate for 1,000 oz. lots in 100 oz. tins; while in the speculative market there have been buyers (with, however, but few sellers) at 1s. 2d. per oz. for B&S and/or Brunswick, on the spot, at 1s. 2¼d. per oz. for June and 1s. 2½d. per oz. for August delivery. It is thought that we shall see a further advance in makers' price before very long.

ROSIN.—Common strained spot 4s. 9d. ex wharf. March-May and April-June sailer 4s. 4½d. ex ship terms.

SALOL—Is unchanged at 2s. 3d. per lb., with a certain small discount for larger quantity.

SHELLAC.—The Calcutta price of TN Orange is cabled unchanged at 57 rupees. The market here is dull, and prices are easier. On the spot the demand continues slow, and sales are quite unimportant. Futures quiet and weaker, but close steadier. Call prices: April TN, sellers 114s., buyers 111s.; May, sellers 114s., buyers 111s. 6d.; June, sellers 114s., buyers 113s.; July sellers 115s. 6d., buyers 113s. 6d.; August, sellers 117s., buyers 115s. The sales include 200 cases, June delivery at 114s., and August at 115s. 6d.

SULPHATE OF AMMONIA—Quiet. Grey 24 per cent. London prompt £12. Hull prompt £11 16s. 3d. to £11 17s. 6d. Leith prompt £11 18s. 9d. to £12. Beckton prompt £12. May-June £11 12s. 6d. Beckton terms prompt £11 15s.

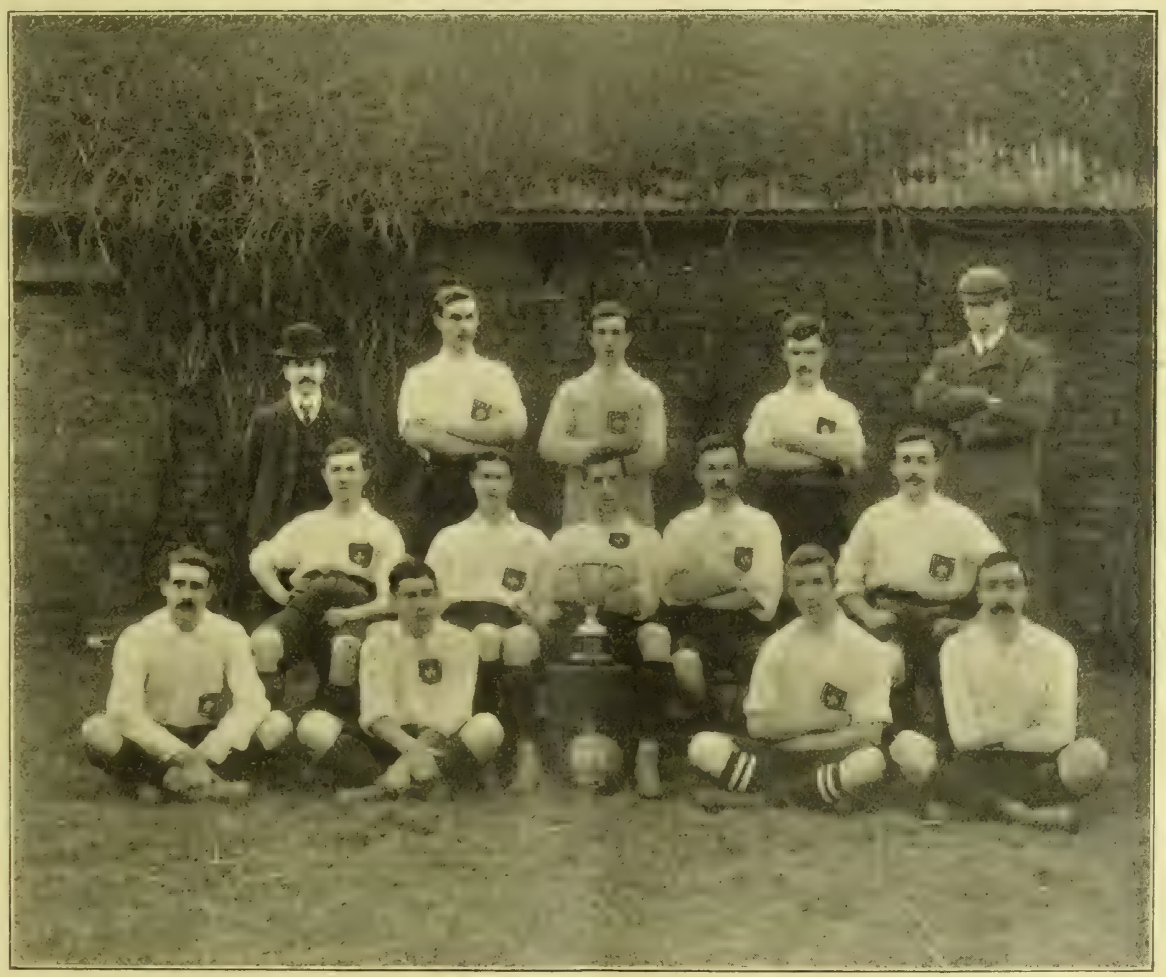
SULPHONAL.—Bayer's make can still be bought at 5s. per lb. for both crystals and powder for quantity and in bulk packing.

SCHOOL AND COLLEGE NEWS.

The Square Football Club.—The members of the Pharmaceutical Football Club, which consists of students at the School of Pharmacy, 17, Bloomsbury Square, London, have had a most successful season. They are winners of the Cup presented by Mr. Watson Will to the Inter-Pharmacy League. In the League matches they scored twenty goals, whilst only six goals were scored against them. Throughout the season they have scored forty-six goals, and only had ten scored against them. The good goal record is due to the excellent play of G. R. Cleghorn, against whom only six goals were scored the whole season. The defence this year has also been very strong, Martin and Paterson playing well together. The most combined players in the team have undoubtedly been the "halves," who have played a consistent game throughout. The "forwards," although not playing with great combination, have played good individually, and have shot well. The team has played fourteen matches and only lost two. Portraits of the members of the Club, from a group protograph recently taken by Skillman, Uxbridge Road, W., appear on this page.

PHARMACEUTICAL FOOTBALL CLUB.

Winners of the Inter-Pharmacy League Cup. Season 1901-2.



A. N. HIRST (Hon. Sec.) W. N. STRANACK G. R. CLEGHORN A. G. C. PATERSON H. S. PHILLIPS (Linesman)
TUDOR WILLIAMS H. MARTIN (Vice-Captain) H. G. MITCHELL (Captain) F. H. MOORE E. COLLITT
F. G. HINES J. S. HILLS V. C. HEWLETT W. H. ALLEN

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. Joseph Fletcher, chemist, Scunthorpe, has been placed on the Commission of the Peace for the Parts of Lindsey.

Mr. George Nelmes, M.P.S., Divisional Secretary for the Kirkdale Division of Liverpool, has been unanimously elected people's warden of St. Timothy's Church, Rokeby Street.

Mr. P. J. Ashfield, M.P.S., of High Street, Rhyl, is the subject of an interesting article on "Local Industries and Businesses," published in the *Rhyl News* of March 28 last.

Mr. F. W. Bates, M.P.S., Chairman of the Stretford Urban District Council, has been specially thanked by the Council for his services during the past official year, and particularly for successfully guiding the Council to victory against Manchester's attempt to include it within the city limits.

Mr. F. H. Glew, M.P.S., of Clapham Road, S.W., is the author of a special article, published in *Photography* of

March 27 last, entitled "Experiments with the Radium Radiations," in which he shows the photographic action of radium through various coins.

TRADE NOTES AND NOVELTIES.

The Chesebrough Manufacturing Co., of 42, Holborn Viaduct, have an announcement in our advertisement pages notifying that their penny tins of vaseline have been increased to double the size, and that the price remains as formerly, viz., 6s. 6d. per gross. As mentioned in last week's Journal (page 264), the Court of Appeal has decided that the company's trade mark, "Vaseline," is valid, and it therefore remains on the register. The effect of this decision is that no pretroleum jelly except that manufactured by the Chesebrough Manufacturing Company may be sold as vaseline.

Dr. Horn's Pocket Inhaler.—Dr. C. E. Horn, Glendower, Bournemouth, sends a specimen of his anti-microbe pocket inhaler, which he claims to be invaluable for the relief and cure of pulmonary and throat affections, asthma, bronchitis, consumption, hay fever, nasal catarrh, etc., and as a protection against influenza, diphtheria, and other bacterial disorders. The inhaler, which can easily be carried in the waistcoat pocket, is made of ivory, and is sold at 2s. 6d. The medicament used is terpeneless extract of pine needles, eucalyptus, and thyme, a supply to last over twelve months being supplied with each inhaler.

DIARY OF THE WEEK.

Monday, April 7.

Royal Institution of Great Britain, Albemarle Street, Piccadilly, W., at 5 p.m.—General Monthly Meeting.

Society of Chemical Industry, Burlington House, Piccadilly, W., at 8 p.m.—"Some Recent Improvements in the Photography of Colour," by E. S. Shepherd.

Wolverhampton and District Chemists' Association.—"Tinctura Opii, its Assay and Marc," by F. H. Alcock.

Tuesday, April 8.

Bradford and District Chemists' Association.—Annual Dinner.

Gresham College, Basinghall Street, E.C., at 6 p.m.—First of a series of four Lectures on "Food and Diet," by Dr. E. Symes Thompson; succeeding Lectures on April 9, 10, and 11.

Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, W.C.—Finance and other Committees.

Royal Institution of Great Britain, Albemarle Street, Piccadilly, W., at 3 p.m.—"Recent Methods and Results in Biological Inquiry," by A. Macfadyen.

Wednesday, April 9.

Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, London, at 11 a.m.—Meeting of the Council.

Manchester Pharmaceutical Association.—Annual Meeting.

Newcastle-on-Tyne and District Chemists' Association, Hôtel Métropole, West Clayton Street, at 8.30 p.m.—"Tests for Arsenic," by F. R. Dudderidge; "Optics," by W. Graham.

Newcastle-on-Tyne Young Chemists' Association, Working Men's Club, Gallowgate, at 8.15 p.m.—Annual meeting.

Thursday, April 10.

Chemists' Assistants' Association. 73, Newman Street, W., at 8.30 p.m.—"Notes on Some Pharmacopœial Preparations," by E. A. Andrews.

North Staffordshire Chemists' Association, Alexandra Hotel, Stafford, at 4.30 p.m.—Annual Meeting, followed by the Annual Dinner.

Royal Institution of Great Britain, Albemarle Street, Piccadilly, W., at 3 p.m.—"The Oxygen Group of Elements," by Prof. Dewar.

Friday, April 11.

Royal Institution of Great Britain, Albemarle Street, Piccadilly, W., at 9 p.m.—"Problems of the Atmosphere," by Prof. Dewar.

PUBLICATIONS RECEIVED.

Pharmaceutical List of Queensland for the Year 1902. Price 1s. Brisbane: Pharmacy Board of Queensland. From the Registrar.

The Medical Register. Printed and Published under the Direction of the General Council of Medical Education and Registration of the United Kingdom. 1902. Pp. 1,653. Price 6s. London: Spottiswoode and Co., Ltd., 54, Gracechurch Street, E.C. From the General Medical Council.

DISINFECTANTS

The "Sanitas" Co., Lim.

are the exclusive Manufacturers of the well-known Non-poisonous

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and their other Manufactures include "SOLDIS," "OKOL," "CREOCIDE," "FORMITAS," "KINGZETT'S PATENT SULPHUR FUMIGATING CANDLES," "SULPHUGATORS," "FORMIC SULPHUGATORS," "FORMIC AIR PURIFIERS," "FORMIC FUMIGATORS," KINGZETT'S PATENT DRAIN TESTERS, SHEEP DIPS, WEED KILLER, PATENT PRESERVED PEROXIDE OF HYDROGEN, INHALERS, DISINFECTORS, FUMIGATORS, BRONCHITIS KETTLES, and other Sanitary and Disinfecting Appliances.

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The PASTEUR (*Chamberland*) FILTER

"A real preventative of Typhoid."
—*Lancet.*

Write for Illustrated List.

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J. DEFRIES & SONS, Ld.

147, Houndsditch, London, E.C.

BIRTH.

Thompson.—On March 26, at 3, Anglesea Road, Kingston-on-Thames, the wife of Henry P. Thompson, of a daughter.

Notices to Correspondents.

All Communications for the 'Pharmaceutical Journal' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street Lincoln's Inn, London.

Contributions sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

Correspondents should write in ink, on one side of the paper only, and must authenticate the matter sent with their names and addresses, though not necessarily for publication. No notice can be taken of anonymous communications.

Drawings for Illustrations should be executed twicc the desired size, clean sharp lines being drawn with a pen and liquid Chinese ink. Shading by washes is inadmissible. Photographs can be utilised in certain cases.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Adamson, Ashfield, Barnes, Barrett, Bell, Brookes, Burton, Cocking, Cooke, Crinon, Cullen, Cummings, Davis, Glew, Green, Hick, Hill, Holt, Horn, Jones, Langley, Lord, Lothian, Maben, Mumford, Nelmes, Pickworth, Reynolds, Rotham, Scott, Shepperd, Smith, Thompson, Usher, Wallis, White, Young.

Pharmaceutical Journal

SATURDAY, APRIL 12, 1902.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

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Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

MESSRS. DUNKLEY & ROGERS, Chemists, Tunbridge Wells, require a qualified JUNIOR.—Please state full particulars and salary required.

ASSISTANT or IMPROVER wanted.—State age, height, and full particulars, and enclose photo (to be returned) to G. CRAWSHAW, Hyde Park, Leeds.

ASSISTANT required, whole or part-time, with good knowledge of Dispensing.—Apply, stating usual particulars, to ROUTLEY & Co., Beckenham.

LONDON (Suburb), S.W.—Junior ASSISTANT for select Dispensing and Retail business; indoors.—CHEMICUS, Messrs. Barron, Harveys, Giltspur St., E.C.

GOOD JUNIOR wanted; knowledge of Photography preferred; state experience, age and salary, and send photo.—J. R. BARRETT, Clarendon Pharmacy, Leamington.

QUALIFIED ASSISTANT, about 23, accustomed to first-class business; well up in Dispensing.—Apply, giving usual particulars, to FOSTER & ELSE, 52, King's Rd., Brighton.

KEIGHLEY.—Wanted, a good all-round ASSISTANT, one only kept, for a light general business.—State age, salary, whether qualified, and all usual particulars, A. N. KERSHAW, Chemist, Keighley.

BARKING.—Junior ASSISTANT wanted (indoors); comfortable home and easy hours; highest references required.—Write, with full particulars, to CHAS. H. RIDLEY, Chemist, Broadway, Barking.

JUNIOR or IMPROVER wanted (by 21st, if possible), for good-class Dispensing and Retail; £60, outdoor.—Apply, with full particulars and photo, if convenient, FEARNLEY, Chemist, 168, Chapeltown Rd., Leeds.

Assistants Wanted—Continued

ASSISTANT wanted, with experience in select Dispensing establishment, and qualified; two kept.—Apply, stating experience, salary required (indoors), &c., WHISTON & Co., Chemists, St. James's Sq., Bath.

LONDON, W.—A West End Dispensing house requires a qualified ASSISTANT of good training and experience of high-class trade.—State full particulars to PHARMAKOS, Pharm. Journal Office, 8, Serle St., W.C.

GOOD JUNIOR wanted, not under 22, accustomed to high-class Dispensing and Retail; indoors; abstainer preferred.—State experience, salary required, and enclose photo, or apply personally, R. H. PARKER, 35, Clifton Rd., Maida Vale, W.

TEMPORARY and Part-time, from about June to September inclusive; suit student for Preliminary study before entering college for winter session; small salary, and time for study.—Full particulars, CADGE, Chemist, Bingham, Notts.

WANTED, a qualified man (must have passed the Minor Examination of the Pharmaceutical Society) as DISPENSER'S ASSISTANT; salary £75 per annum, with dinner.—Apply to HOUSE GOVERNOR, General Hospital, Wolverhampton.

KENSINGTON.—A JUNIOR, about 21 years of age; one from a good country business not objected to; accustomed to Dispensing.—Apply, stating experience and salary required, to R. S. DAMPNEY, 70, Warwick Rd., Kensington, S.W.

LEDBURY.—Junior ASSISTANT or IMPROVER wanted, about April 10, in good-class country business; hours easy.—State age, salary required (indoors), references, and enclose photo (to be returned), to V. W. MEACHAM, Chemist, Ledbury.

WANTED, a gentleman well trained in the Wholesale Drug Trade who is expert at figures; progressive position.—Write, stating experience very fully, age, and salary required, to C. D. W., c/o Dixon's Advertising Agency, 195, Oxford St., W.

Continued on next page.

A Copy of this Inset is inserted in every *Pharmaceutical Journal* issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at the Publishing Office, 8, Serle St., London, W.C., and at more than two hundred addresses in the United Kingdom; a list of these addresses was published last week.

Assistants Wanted—Continued

A Copy of this Inset will be forwarded gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at more than two hundred addresses in the United Kingdom; a list of these was published last week.

LONDON, S.W.—Immediately, in good-class modern Retail and Dispensing business, a competent Assistant who has had experience in Dispensing; not under 21.—Keith Longstaff, The Central Pharmacy, 811, Fulham Rd., S.W. (a little beyond Walham Green).

WANTED, capable Assistant; hours, 8 to 8; half-day weekly.—Apply, with full particulars as to age, height, salary required, previous experience and references, enclosing photo (to be returned), to J. A. Symonds, Chemist, 16, Upper Brook St., Ipswich.

JUNIOR Assistant (indoor); must have had good Retail and Dispensing experience in high-class business.—Apply, with full particulars as to age, experience, qualification, references and salary required, to Brady & Martin, Northumberland Rd., Newcastle-on-Tyne.

PLYMOUTH.—Improver or Junior in good Retail and Dispensing business; portion of time to be occupied in Dispensing in a Surgery.—Enclose photo, and state age, height, experience, and salary required (indoors), to Condy U'Ren, Chemist, 55, Cobourg St., Plymouth.

CHINA.—Wanted, an Assistant who has been accustomed to first-class Retail and Dispensing business; qualification by examination desirable but not essential; four years' agreement; passage paid out and home; salary, £14 to £16 per month according to qualification, and rising to £17 to £19 per month; free quarters.—Address, China, 64, Crutched Friars, E.C.

CAPE COLONY.—Wanted, qualified Assistant, of good experience and having undeniable references; aged about 23; salary, 1st year, £12 per month; 2nd year, £13 per month; 3rd year, £14 per month; sleeping accommodation provided; second-class passage paid out; 3 years' agreement.—Apply, Colony, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

FINSBURY DISPENSARY, Brewer St., Goswell Rd., E.C. —Dispenser wanted; salary, £55; hours of attendance, 11.30 a.m. to 3.30 p.m. daily (Sundays and Bank Holidays, excepted); must possess the Major or Minor qualification; duties begin on April 25 next.—Applications, with testimonials, to be sent before April 15, to W. H. Pratt, Secretary, at the Dispensary.

WANTED, at Hastings, an experienced Dispenser; outdoor; well used to light class counter trade; a permanency if suitable; the business is done in separate departments as light Retail and Dispensing, Surgical Instruments and Appliances, Ophthalmic Optics, Amateur Photographics.—State salary, duration of last two situations, etc., to J. Griffiths Richards, Chemist, Hastings.

CALCUTTA.—Wanted at once, a qualified Assistant; age about 24 years; must be able to conduct analysis; first-class opening for a competent man. Salary, 1st year, 275 Rs. per month; 2nd year, 300 Rs. per month; 3rd year, 325 Rs. per month, and 4th year, 350 Rs. 4 years' agreement. Second class passage paid both ways.—Apply by letter to Calcutta, c/o Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

INDIA (N.W. Province).—Wanted, a good Assistant, well up in all branches of a Chemist's business; Minor qualification. Salary, 1st year 150 rupees per month, 2nd year 175 rupees per month, 3rd year 200 rupees per month; free furnished apartments; second-class passage paid out; required to start early in April; candidates must hold undeniable references.—Address, India, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

Assistants Wanted—Continued

CAPE COLONY.—Wanted, good Assistant, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £150; second year, £160; third year, £170; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, Cape, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified Assistant; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to Straits Settlements, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

SANITARY INSPECTORSHIPS.—Salaries £100 to £250. Numerous vacancies. Permanent appointments. Chemists or Assistants desiring change of occupation should qualify as Sanitary Inspectors. Special Postal Course of Lessons now commencing for London, Liverpool, Leeds, Cardiff, Manchester, Leicester, Newcastle-on-Tyne and Belfast exams. Anyone of average ability can pass. Had over 250 successful candidates, and fully half had no previous knowledge of sanitary matters.—Apply, Robert H. Mushens, Sanitary Science Teacher, Sunderland.

LONDON COUNTY ASYLUM, Horton, near Epsom, Surrey. —A Dispenser is required. Salary £110 per annum, rising by £10 a year to £150, with dinner daily. Candidates must be duly qualified by the Pharmaceutical Society and possess practical knowledge of Photography. Persons desirous of applying must write (enclosing stamped addressed foolscap envelope) to the undersigned for a form of application, upon which the conditions of service and other particulars will be stated.

Applications are to be delivered at this office by twelve noon on Saturday, April 19, 1902, accompanied by copies of not more than three recent testimonials.

R. W. Partridge, Clerk of the Asylums' Committee.
Asylums' Committee Office, 6, Waterloo Place, S.W.
April 8, 1902.

Apprentice

APPRENTICE, in or out-door; time for study; no heavy trade.—Apply, Barnes, Chemist, Newton Abbot.

Shop Fittings for Sale

TO be Sold immediately, entire Fittings of good-class modern Pharmacy; building coming down; must sell at once; stock included if desired.—Apply. on premises, 98, Strand, W.C.

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CHEMIST'S.—Splendid opening in a new colliery district, the largest colliery in South Yorkshire; good house and shop, plate-glass front, roller-shutters, and good cellar, with concrete floor; main road; no opposition; three hundred houses now occupied and plans passed for two hundred more. —Apply, F. W. Andrews, Draper, Royston, Barnsley.

" Sale and Exchange " will be found on PAGE 16.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM; qualified; abstainer.—E. Kemp, 11, Cheapside, St. Leonards-on-Sea.

LOCUM, M.P.S.; town or country; disengaged.—W. Smith, 12, Westfield Rd., Surbiton.

LOCUM; qualified; good references.—Opticus, 136, South Rd., Erdington, Birmingham.

LOCUM or Manager; experienced; qualified; 30; abstainer. —J. H. G., 24, Munster Road, S.W.

TEMPORARY; 31; qualified; experienced; disengaged 28th.—Chemist, c/o Mr. Wade, Chemist, Sidcup.

TEMPORARY Assistant or Branch Manager.—For particulars apply, Michell Trick, Newton, Mumbles.

DISPENSER; 26; experienced; qualified; abstainer.—Dispenser, Pharm. Journal Office, 8, Serle St., W.C.

DISPENSER (Lady), qualified, desires re-engagement; London or suburbs.—A. B. Hambling, Eltham, Kent.

MANAGER, Senior, temporary or otherwise; qualified; nearly 14 years in last situation.—Pharmacist, 107a, Aslett St., S.W.

MR. WYATT, Pharmaceutical Chemist, Town Hall Square, Lancaster, can recommend a competent Senior Assistant (unqualified). Enquiries will receive prompt consideration.

LOCUM TENENS; days, weeks; moderate; reliable; engagements booked forward.—T. C. Beach, M.P.S., Windsor Edge, Inchbrook, Stroud, Glos. Telegrams: Beach, Nailsworth.

GOOD permanency wanted as Manager or Senior; outdoors; London only; first-class experience; undeniable references; qualified; married; 39; disengaged.—Chemist, 3, Duncan Rd., Richmond.

LOCUM, Branch Manager or Senior; qualified; 37; store experience and West-end; Extractor, Prescriber, and knowledge of Photography; excellent references; disengaged.—Statim, 140, Kennington Park Rd.

LOCUM TENENS; qualified; age 27; 11 years' first-class London and Provincial experience; knowledge of Photography; excellent testimonials; engagements for any period booked in advance.—Acacia, Pharm. Journal Office, 8, Serle St., W.C.

ASSISTANT, tall, with good London experience, requires situation as Dispenser, in the City or West End; outdoors; personal interview; disengaged last week in April.—Apply, E. Stanford, M. F. Curswell, Esq., Dunsby Fen, Dunsby, Spalding, Lincs.

A YOUNG Man, Pharmacien by examination, with slight knowledge of the English language and thorough knowledge of both French and German, desires a situation on the 1st of July as Assistant in a first-class Pharmacy.—Address, Mr. Monnin, Notaire, Moutier, Switzerland. H 30775.

EMERGENCY.—Locum Tenens; mixed business; qualified; abstainer; Extractor; Prescriber; excellent recent testimonials; usual terms.—Brewerton, c/o Scott, Chemist, Barrow-in-Furness; disengaged April 14th; after that date address Brewerton, 133, Liverpool Rd., Birkdale, Southport.

MANAGER or Senior Assistant.—A Pharmaceutical Chemist of experience (married, abstainer) desires an appointment of a permanent character as such, in a health resort (Tunbridge Wells or South Coast); outdoor; highest references given.—Address, with particulars, Apenta, Pharm. Journal Office, 8, Serle St., W.C.

CHEMISTS' TRANSFERS.

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MESSRS. ORRIDGE & CO., Chemists' Transfer Agents, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

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Chemists' Transfer Agents and Valuers,

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Businesses for Disposal

FOR DISPOSAL.—First-class Dispensing and light Retail; returns about £900.—Apply, Alpha, Pharm. Journal Office, 8, Serle St., London, W.C.

LONDON, S.W.—A thoroughly genuine old-established Business with large proportion of Dispensing; returns, £1,300; no agents.—Apply, S. W., Pharm Journal Office, 8, Serle St., W.C.

FOR SALE.—Old-established Chemist and Druggist Business; convenient shop, stabling, large garden; situated in a good market town in the West of England; two lines of railways; excellent district; stock, fixtures, &c., by valuation. —Apply, E. W. Helps, Bank Chambers, Bridgwater.

PRESCRIBING and General Business and premises, consisting of shop, large room and cellar, with dwelling-house (let off); North-East district; an excellent position for Prescriber and Extractor; large profits; business been neglected; satisfactory reason for disposal.—Apply, Medicus, Pharm. Journal Office, 8, Serle St., London, W.C.

WEST-END.—£4,000.—A Dispensing Business, of the highest possible character, producing a net profit of £1,000 per annum, which in the hands of two energetic men could be doubled, will be sold by lump sum, or small goodwill and valuation of stock and fixtures; bankers' or other references required.—Apply, Messrs. Berdoe & Co., Valuers, 35, Jewry St., Fenchurch St., City.

A WELL-ESTABLISHED light Retail and Dispensing Business in good-class residential neighbourhood, S.E.; well stocked and fitted; returns, £850; net profit, £200; very convenient house and garden; private entrance; long lease; price, £600 net; every information to *bona-fide* purchasers; no agents.—Apply, with references, to M.P.S., c/o Redford, 82, Byne Rd., Sydenham.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Wanted.—Dobson's Black Leg Drinks.—Wood, Chemist, Arnold.

Platinum; disused utensils and scraps.—P. Rowsell 9, Derwent Grove, Dulwich.

Pharmacopœia Austriaca, State edition.—Condition, price, carriage paid, to A. Wright, Yeovil.

OFFERED.

Dental Chair; good condition; price 90s.—Dentalis, 7, Osborne Terrace, Landport.

Offers.—4 lbs. Potass. Iodid.; 4 lbs. Iodoform Precip.; 25ozs. Quin. Sulph.—Eastman, Stratford.

Photographic Mounts. 2,500 cabinets, 25s.; 2,000 C.D.V.'s, 7s. 6d. to clear.—Edward Peck, East Dereham.

100 G. B. Kent Pref., 22s.; 100 Idris "A" Ord., 20s. 9d.; 35 Camwal Ord., 16s. 9d.—M., 30, Tranquil Vale, Blackheath, S.E.

Twenty £1 Camwal Ordinary shares and five £1 Preference; offers wanted; no commission.—E., Pharm. Journal Office, 8, Serle St., W.C.

Fish Knives and Forks.—Bargain; splendid walnut cabinet, beautifully fitted, containing 6 pairs best silver-plated fish knives and forks, hand-engraved blades and real ivory handles, quite new and perfect, Mappin's make, only 30s.; worth 52s.; approval before payment.—Mr. P. Ralph, Cambridge House, Lakenheath, Suffolk.

OFFERED—*Continued.*

African Curios, Weapons, Skins, Photos Battlefields for cash; Information about Employment, Shares, Mining, 2s. 6d. —James Frederick Janssen, Expert, Durban, Africa.

Croquet Set—For disposal, very cheap, splendid set of County Club Croquet, consisting of 4 superior boxwood mallets, with large heads, 4 boxwood balls, painted regulation colours, set of stout narrow hoops, clips, drill, etc., in nice case complete; unused and perfect; only £1 14s. 6d.; worth £2 15s.; approval before payment.—Mr. P. Ralph, Cambridge House, Lakenheath, Suffolk.

For Sale.—A perfect "Dark Room," at a sacrifice; nearly new; owner requiring the space; takes in pieces for moving in twenty minutes; 6 ft. 6 in. high, with own floor 3 ft. 6 in. square; fitted by owner for gas outside double red window; large tank on top, pipe and tap for water supply; lead sink and waste pipe; shelves inside; ruby lining; price £4 the lot as standing.—May be seen in working order at Willsher's Drug Stores, 70, Perry Vale, Forest Hill, S.E.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

Metric Measures of Mass with Imperial Equivalents.

The Gramme (Gm.) equals 15·432 grains, and was originally the mas of one-thousandth part of a cubic decimetre of water at 4° C.; it is now equal to the mass of one-thousandth part of a solid cylinder of iridio-platinum 39 Mm. high and the same in diameter, a copy of which is in the possession of the Board of Trade.

The subdivisions of the gramme are the
Decigramme (Dgm.) = 0·100 Gm. = 1·543 grain.
Centigramme (Cgm.) = 0·010 Gm. = 0·154 grain.
Milligramme (Mgm.) = 0·001 Gm. = 0·015 grain.

The multiples of the gramme are the
Dekagramme (Dkgm.) = 10·0 Gm. = 0·3527 oz.
Hectogramme (Hgm.) = 100·0 Gm. = 3·5274 oz.
Kilogramme (Kilo.) = 1000·0 Gm. = 2·2046 lbs.
Myriagramme (Mygm.) = 10·0 Kilo. = 22·0462 lbs.
Quintal (Q.) = 100·0 Kilo. = 1·9684 cwt.
Millier or Tonne (T.) = 1000·0 Kilo. = 0·9842 ton.

Conversion of Metric to Imperial Units.

Grammes ÷ 15·432 = Grs.
Grammes × 0·065 = Grs.
Grammes ÷ 1·296 = Scr. (Ap.).
Grammes ÷ 3·888 = Drs. (Ap.).
Grammes × 0·032 = Oz. (Troy).
Grammes ÷ 31.104 = Ozs. (Troy).
Grammes × 0·035 = Ozs. (Av.).
Grammes ÷ 28·344 = Ozs. (Av.).
Kilogrm. × 2·205 = Pounds.
Kilogrm. ÷ 0·454 = Pounds.

Conversion of Imperial to Metric Units.

Grains ÷ 15·432 = Gms.
Grains × 0·065 = Gms.
Scruples (Ap.). × 1·296 = Gms.
Drachms (Ap.). × 3·888 = Gms.
Ounces (Troy). ÷ 0·032 = Gms.
Ounces (Troy). × 31·104 = Gms.
Ounces (Avoir.) ÷ 0·035 = Gms.
Ounces (Avoir.) × 28·344 = Gms.
Pounds (Avoir.) ÷ 2·205 = Kilo.
Pounds (Avoir.) × 0·454 = Kilo.

CONVERSION OF IMPERIAL TO METRIC MEASURES.

Minims, Drachms and Fl. Ounces to Millilitres; Pints to Litres

	Minims to Ml.	Drachms to Ml.	Ounces to Ml.	Pints to Litres.
1	0·05916	3·552	28·412	0·568
2	0·11832	7·103	56·825	1·136
3	0·17748	10·655	85·237	1·705
4	0·23664	14·206	113·649	2·273
5	0·29580	17·758	142·065	2·841
6	0·35496	21·309	170·474	3·409
7	0·41412	24·860	198·886	3·977
8	0·47328	28·412	227·298	4·545
9	0·53244	31·964	255·711	5·111

Explanation of Table.—The first column represents the number of minims, drachms, fluid ounces. or pints. Thus: 4 minims = 0·23664 Ml.; 4 drachms = 14·206 Ml.; 4 fl. oz. = 113·649 Ml.; 4 pts. = 2·273 Litres.

Bath's Profit Assessment.

The following examples show how the important questions of profits and percentages upon cost and sales can be effectually dealt with. The cost and profit figures may be taken as either pounds, shillings, pence or farthings.

1. To find the percentage of profit on cost—
   Say the cost is 8 and the profit 4.
   4 × 100 = 400 ÷ 8 = 50 per cent.
2. To find the percentage of profit on sales—
   Taking the same figures for cost and profit.
   4 × 100 = 400 ÷ 12 (4 + 8) = 33 per cent.
3. To find what amount to add to cost to realise a certain rate per cent. upon the cost—
   Say the cost is 6 and the rate required 25 per cent.
   6 × 25 = 150 ÷ 100 = 1 5
   which may be £1 10s., 1s. 6d., or 1½d.
4. To find what amount to add to cost to produce a certain rate per cent. upon sales—
   Say the cost is 6 and the rate 25,
   6 × 25 = 150 ÷ 75 (100 − 25) = 2.

Bath's Handy Table for Assessing Profits.

By adding to the cost, as follows, the relative percentages of profit are obtained:—

One-half	50	per cent. on cost, and	33	per cent. on sales.
,, third	33·33	,, ,,	25	,, ,,
,, fourth ..	25	,, ,,	20	,, ,,
,, fifth	20	,, ,,	16·6	,, ,,
,, sixth	16 6	,, ,,	14·28	,, ,,
,, seventh ..	14 28	,, ,,	12·5	,, ,,
,, eighth ..	12·5	,, ,,	11·11	,, ,,
,, ninth.. ..	11·11	,, ,,	10	,, ,,
,, tenth.. ..	10	,, ,,	9·09	,, ,,
,, eleventh ..	9·09	,, ,,	8·33	,, ,,
,, twelfth ..	8·33	,, ,,	7·69	,, ,,
,, thirteenth..	7·69	,, ,,	7·14	,, ,,
,, fourteenth..	7·14	,, ,,	6·66	,, ,,
,, fifteenth ..	6·66	,, ,,	6·25	,, ,,
,, sixteenth ..	6·25	,, ,,	5·88	,, ,,
,, seventeenth	5·88	,, ,,	5·55	,, ,,
,, eighteenth .	5·55	,, ,,	5 26	,, ,,
,, nineteenth .	5·26	,, ,,	5	,, ,,
,, twentieth ..	5	,, ,,	4·76	,, ,,

BYE-LAWS OF THE PHARMACEUTICAL SOCIETY.

For the convenience of readers the existing Bye-laws of the Pharmaceutical Society and the proposed Bye-laws are here presented side by side for comparison.

Present Bye-Laws.	**Proposed Bye-Laws.**
PRELIMINARY.	PRELIMINARY.
All the Bye-laws heretofore passed are hereby repealed, and the following shall be the Bye-laws of the Society. In the following Bye-laws: Words importing the singular number shall include the plural number, words importing the plural number shall include the singular number, and words importing the masculine shall include the feminine, unless there be something in the subject or context repugnant to such construction. "The Society" shall mean and intend the Pharmaceutical Society of Great Britain. "The Charter" shall mean and intend the Royal Charter of Incorporation of the Society. "The Statute, 1852," shall mean and intend the Statute 15 and 16 Vict., cap. 56, intituled "An Act for regulating the qualifications of pharmaceutical chemists." "The Act, 1868," shall mean and intend the Statute 31 and 32 Vict., cap. 121, intituled "An Act to regulate the sale of poisons and alter and amend the Pharmacy Act, 1852." "The Council" shall mean and intend the Council of the Society. "The Secretary" shall mean and intend the Secretary of the Society, and "The Registrar" shall mean and intend the Registrar appointed under the provisions of the Statute 15 and 16 Vict., cap. 56, and of the Statute 31 and 32 Vict., cap. 121.	No alteration
SECTION I.	SECTION I.
QUALIFICATIONS, ELECTIONS, AND SUBSCRIPTIONS.	QUALIFICATIONS, ELECTIONS, AND SUBSCRIPTIONS.
1. Persons who have become Members may continue to be such Members. Persons who have become Students shall become and be registered as Student-Associates, and all the said Members and Student-Associates shall be subject to the Bye-laws of the Society in force for the time being.	1. Persons who have become Members or Student-Associates may continue to be such Members or Student-Associates, and shall be subject to the Bye-laws of the Society in force for the time being.
2. Every person who on the 25th day of July, 1898, was an "Associate in Business" may be elected by the Council a Member of the Society without special application in that behalf, and such persons shall be exempt from further contribution to the Society in respect of the year 1898, and save as appears hereby persons qualified to be elected Members, or Student-Associates, shall, at a meeting of the Council, be proposed and seconded by Members of the Council. The qualification of each proposed Member or Student-Associate shall be stated in a resolution, which, when proposed and seconded, shall be submitted to the Council, and, when passed, shall confer the right of becoming a Member or Student-Associate.	2. Persons qualified to be elected Members, or Student-Associates, and desirous of being so elected, shall, at a meeting of the Council, be proposed and seconded by Members of the Council. The qualification of each proposed Member or Student-Associate shall be stated in a resolution, which, when proposed and seconded, shall be submitted to the Council, and, when passed, shall confer the right of becoming a Member or Student-Associate.
3. Persons registered as Pharmaceutical Chemists or as Chemists and Druggists, and desirous of becoming Members, shall make application to the Council in that behalf, and no persons other than Pharmaceutical Chemists or Chemists and Druggists shall be elected Members, unless as Honorary Members or as Corresponding Members.	3. Persons registered as Pharmaceutical Chemists or as Chemists and Druggists, and desirous of becoming Members, shall make application to the Council in that behalf, and therewith pay the subscription for the current year, and no person other than Pharmaceutical Chemists or Chemists and Druggists shall be elected Members, except as Honorary Members or as Corresponding Members.
4. Persons registered as "Apprentices or Students" shall be eligible for election as Student-Associates, and, if desirous of being elected accordingly, shall make application to the Council in that behalf.	4. Persons registered as "Apprentices or Students" shall be eligible for election as Student-Associates, and, if desirous of being elected accordingly, shall make application to the Council in that behalf, and therewith pay the subscription for the current year.
5. All persons, on election as Members, or Student-Associates, shall leave with the Registrar a signed declaration, stating their full names and addresses, and their willingness to comply with the regulations of the Society.	5. All persons, on applying for election as Members, or Student-Associates, shall leave with the Registrar a signed declaration, stating their full names and addresses, and their willingness to comply with the regulations of the Society.
6. All subscriptions for the current year shall become due upon election, and all annual subscriptions shall become due on the first day of January in every year; and if any person shall not have paid his annual subscription before the first day of May in any year, his name shall be omitted from the Register of Members or of Student-Associates. It shall be competent to the Council to restore any person whose name has been so omitted to his former status in the Society on payment of his subscription for the then current year.	6. All subscriptions for the current year shall be payable on application for election, and all annual subscriptions shall become due on the first day of January in every year; and if any person shall not have paid his annual subscription before the first day of April in any year, his name shall be omitted from the Register of Members or of Student-Associates. It shall be competent to the Council to restore any person whose name has been so omitted to his former status in the Society on payment of his subscription for the then current year.

Present Bye-Laws.	Proposed Bye-Laws.
	[Paragraph 7 in the present Bye-laws becomes paragraph 9, and paragraphs 8 and 9 become 7 and 8 respectively.]
7. All persons who have become Life Members or Life Associates pursuant to Bye-laws, which have heretofore from time to time been in force shall be exempt from further contributions.	7. No alteration.
8. All Members, except Life Members, Honorary Members and Corresponding Members, shall pay an annual subscription of one guinea.	8. All Members, and all persons qualified for election as Members, shall have the option of becoming Life Members exempt from further subscriptions on payment of a life composition of ten guineas.
9. All Members, and all persons qualified for election as Members, shall have the option of becoming Life Members exempt from further contribution on payment of a life composition of ten guineas.	9. All persons who have become Life Members pursuant to Bye-laws which have heretofore from time to time been in force, shall be exempt from further subscriptions.
10. All Student-Associates shall pay an annual subscription of half a guinea.	10. No alteration.
SECTION II HONORARY AND CORRESPONDING MEMBERS.	SECTION II. HONORARY AND CORRESPONDING MEMBERS.
1. The Council shall at its discretion elect as Honorary Members, or as Corresponding Members, such scientific men as have distinguished themselves in any of the branches of knowledge embraced in the educational objects of the Society.	No alteration.
2. The Council shall from time to time determine the number of persons to be Honorary Members, and the number of persons to be Corresponding Members. There shall be books kept by the Secretary, in which Members of the Council shall enter the names of persons whom they may consider eligible for election as Honorary Members or as Corresponding Members, and at the meeting of the Council in April of every year names may be selected from the books so kept, not exceeding in number the vacancies in the lists of Honorary Members or of Corresponding Members respectively, and the names of the persons so selected shall be exhibited in the Library, until the meeting of the Council in the ensuing month, when the Council shall proceed to the election.	No alteration.
SECTION III. COMMON SEAL.	SECTION III. COMMON SEAL.
1. The Common Seal of the Society shall consist of the armorial bearings, crest, and motto, registered in Her Majesty's College of Arms.	No alteration.
2. The said seal shall be deposited at the House of the Society, in a box having a lock and two keys, one of which shall be in the custody of the President, and the other in that of the Vice-President.	No alteration.
3. The Common Seal may be set or affixed to any deed, instrument, or writing, in pursuance of an order or minute of the Council entered in their minute book and in the presence of the President, or Vice-President, or two Members of the Council, and not otherwise.	No alteration.
SECTION IV. BYE-LAWS AND REGULATIONS.	SECTION IV. BYE-LAWS AND REGULATIONS.
The making, altering, or abrogating of any Bye-law or any Regulation, to be prescribed by the Society, in accordance with any statute, shall be in the following manner:—	
1. A form for any proposed Bye-law or Regulation, or for altering or abrogating any Bye-law or Regulation, being delivered at a Council meeting by a Member of the Council to the Chairman, shall thereupon be read, and if seconded and approved, shall be referred to two subsequent ordinary or special Meetings of the Council for confirmation, and then to a special General Meeting of the Members of the Society, and afterwards to the Privy Council, according to the provisions of the Statute, 1852, and the Act, 1868.	No alteration.
2. A copy of the Bye-laws shall be given free to every Member and Student-Associate on his election, and shall at any time afterwards be delivered to any Member or Student-Associate on his applying for the same and paying one shilling.	No alteration.
SECTION V. ELECTION OF COUNCIL AND AUDITORS.	SECTION V. ELECTION OF COUNCIL AND AUDITORS.
1. Seven Members of the Council shall go out of office in every year, and the vacancies shall be filled by election, the retiring Members not being ineligible for re-election if duly nominated for that purpose. The seven Members who so go out shall be the Members of the Council who have been longest in office without re-election, and if and whenever the number of the Members of the Council who have been longest in office without re-election shall exceed seven, the Members of the Council to retire shall be determined from these by lot.	1. Seven Members of the Council shall go out of office in every year, and the vacancies shall be filled by election, the retiring Members not being ineligible for re-election if duly nominated for that purpose. The seven Members who so go out shall be the Members of the Council who have been longest in office without re-election.

Present Bye-Laws.

2. The retiring Members of the Council shall be ascertained and determined at the monthly meeting held in February of every year,

3. Any Member qualified to vote desirous of nominating any other Member for election as a Member of the Council or as an Auditor, shall on or before the 18th day of March in every year give a notice signed by him to the Secretary, with the name and address of the nominee. The Secretary shall on or before the 20th day of March then instant address and send by post to each nominee a notice of his having been nominated, and inquiring whether he will accept office if elected, and in default of a written reply from such nominee being received on or before the 31st day of March then instant, declaring his readiness to accept office if elected, such nominee shall not be deemed eligible or willing to be elected.

4. The Council shall at its monthly meeting, held in April of every year, prepare a list of all Members nominated for election and willing to be elected Members of the Council and Auditors for the ensuing year; and in default of the nomination of a sufficient number of Members willing to accept office, the Council shall nominate as many as may be required to form a complete list of Members willing to fill all the vacancies in the Council and a complete list of five Auditors. No nominations shall be received or made after the 18th day of March, except such as may be made by the Council, in the manner and under the circumstances aforesaid, at the monthly meeting in April.

5. The Secretary shall send by post to every Member qualified to vote not less than ten days prior to the meeting at which Members of the Council and Auditors are to be elected, a Voting Paper for such elections. The names and addresses of the Members willing to serve, if elected, shall appear in such Voting Papers.

6. At all elections of Members of the Council and Auditors, votes shall be given by ballot, either by personal delivery of the said Voting Papers at the time of election, or by the said Voting Papers being transmitted, under cover, by the Member to the Secretary, so that the same shall be received by him not later than twelve o'clock noon on the day on which the election is to take place, and the Voting Papers shall be as near as conveniently may be in the following form:—

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN,

Bloomsbury Square, London.

Voting Paper.

For the election of Seven Members of the Council.

1*.......................... | 6 ....
2 .... | 7 ....
3 .... | 8 ....
4*.......................... | 9 ....
5 .... | 10 ....

* The names to which Stars are prefixed are those of retiring Members of the present Council.

INSTRUCTIONS FOR VOTING.

Every Member voting must erase the names of all the Members for whom he does not intend to vote. If more than seven names be left, the Voting Paper will be void.

The Voting Paper must be transmitted, under cover, by the Member to the Secretary, so that the same shall be received by him not later than twelve o'clock noon on the day on which the election is to take place, or delivered by the Member personally at the time of election.

The Member voting under cover must write his name and address on the outside of the cover, or the Voting Paper will be void.

The following are the Members who remain on the Council:—

....
....
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Proposed Bye-Laws.

2. The retiring Members of the Council shall be ascertained by, and recorded on the minutes of, the Council at the monthly meeting held in February of every year.

3. All Members, except Honorary and Corresponding Members, are entitled to vote for the election of the Council and Auditors Any Life Member or any Member who has paid his subscription for the current year desirous of nominating any other Life Member or Member who has paid his subscription for the current year for election as a Member of the Council or as an Auditor, shall, on or before the 18th day of March in every year, give a notice signed by him to the Secretary, with the name and address of the nominee. The Secretary shall, on or before the 20th day of March then instant, address and send by post to each nominee a notice of his having been nominated, and inquiring whether he will accept office if elected, and in default of a written reply from such nominee being received on or before the 31st day of March then instant, declaring his readiness to accept office if elected, such nominee shall not be deemed eligible or willing to be elected.

4. No alteration.

5 No alteration.

6. At all elections of Members of the Council and Auditors, votes shall be given by ballot, either by personal delivery of the said Voting Papers at the Annual General Meeting, or by the said Voting Papers being transmitted, under cover, by the Member, to the Secretary, so that the same shall be received by him not later than twelve o'clock noon on the day of the Annual General Meeting, and the Voting Papers shall be as near as conveniently may be in the following form:—

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN,

Bloomsbury Square, London.

Voting Paper.

For the election of Seven Members of the Council.

1*.......................... | 6 ....
2 .... | 7 ....
3 .... | 8 ....
4*.......................... | 9 ....
5 .... | 10 ....

* The names to which Asterisks are prefixed are those of retiring Members of the present Council.

INSTRUCTIONS FOR VOTING.

Every Member voting must erase the names of all the Members for whom he does not intend to vote. If more than seven names be left, the Voting Paper will be void.

The Voting Paper must be transmitted, under cover, by the Member, to the Secretary, so that the same shall be received by him not later than twelve o'clock noon on the day of the Annual General Meeting, or delivered by the Member personally at the Annual General Meeting.

The Member voting under cover must write his name and address on the outside of the cover, or the Voting Paper will be void:—

The following are the Members who remain on the Council:—

....
....
....
....
....
....
....

Present Bye-Laws.	**Proposed Bye-Laws.**
PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, BLOOMSBURY SQUARE, LONDON. VOTING PAPER. *For the election of Five Auditors.* 1 .... 2 .... 3 .... 4 .... 5 .... 6 .... 7	PHARMACEUTICAL SOCIETY OF GREAT BRITAIN. BLOOMSBURY SQUARE, LONDON. VOTING PAPER. *For the election of Five Auditors.* 1 .... 2 .... 3 .... 4 .... 5 .... 6 .... 7 ....
INSTRUCTIONS FOR VOTING. Every Member voting must erase the names of all the Members for whom he does not intend to vote. If more than five names be left, the Voting Paper will be void. The Voting Paper must be transmitted, under cover, by the Member to the Secretary, so that the same shall be received by him not later than twelve o'clock noon on the day on which the election is to take place, or delivered by the Member personally at the time of election. The Member voting under cover must write his name and address on the outside of the cover or the Voting Paper will be void.	INSTRUCTIONS FOR VOTING. Every Member voting must erase the names of all the Members for whom he does not intend to vote. If more than five names be left, the Voting Paper will be void. The Voting Paper must be transmitted, under cover, by the Member, to the Secretary, so that the same shall be received by him not later than twelve o'clock noon on the day of the Annual General Meeting, or delivered by the Member personally at the Annual General Meeting. The Member voting under cover must write his name and address on the outside of the cover or the Voting Paper will be void.
Form of Address, etc., on Cover. VOTING PAPER. Member's Signature .... Member's Address .... *To the Secretary of the Pharmaceutical Society, Bloomsbury Square, London, W.C.* The Voting Paper must be returned to the Secretary, so that the same may be received by him not later than twelve o'clock noon on the day of May, 19 , or be delivered by the Member personally at the time of election.	*Form of Address, etc., on Cover.* VOTING PAPER. Member's Signature .... Member's Address .... *To the Secretary of the Pharmaceutical Society, Bloomsbury Square, London.* The Voting Paper must be returned to the Secretary, so that the same may be received by him on or before the day of May. 19 , or be delivered by the Member personally at the Annual General Meeting.
7. Before the votes are examined, the Members constituting the meeting shall appoint from amongst themselves four or more Scrutineers, of whom four shall form a quorum.	7. Before the votes are examined, the Members constituting the Annual General Meeting shall appoint from amongst themselves five or more Scrutineers, of whom five shall form a quorum.
8. The Voting Papers to be delivered personally shall be received at the General Meeting, and the Voting Papers duly transmitted under cover to the Secretary shall be opened by or in the presence of the Scrutineers.	8. No alteration.
9. The Scrutineers shall ascertain the number of votes given for each Member nominated for election, and shall make to the Chairman a return, signed by them, or four of them, of the names of the Members nominated for election, and the said return shall disclose the number of votes given for each Member named therein.	9. The Scrutineers shall ascertain the number of votes given for each Member nominated for election, and shall make to the Chairman of the meeting a return, signed by them, or five of them, of the names of the Members nominated for election, and the said return shall disclose the number of votes given for each Member named therein.
10. The Chairman of the Meeting shall declare the result of every election; and, in cases where there shall have been a poll, shall declare the election to have fallen on the Members who, according to the return of the Scrutineers contemplated by the last-preceding Bye-law, shall appear to have a majority, and, in the case of the equality of votes, the Chairman of the Meeting shall have a second or casting vote.	10. No alteration.
11. The Chairman, at any Meeting for the election of Members of the Council or Auditors, shall have the power of adjourning such Meeting from time to time, with a view to the reception of the Report of the Scrutineers, but no such adjournment shall extend beyond a period of four days.	11. No alteration.
SECTION VI. COUNCIL.	SECTION VI. COUNCIL.
1. The Council shall meet at the Society's house on about the first Wednesday in every month at eleven o'clock in the forenoon, or at such other day or hour as may from time to time be decided by the Council. Seven Members shall constitute a quorum, and without that number being present no business shall be transacted. Before other business is entered on, the minutes of the preceding monthly and of any subsequent meeting shall be read.	1. No alteration.

Present Bye-Laws.	**Proposed Bye-Laws.**
2. All motions or proposals shall be signed by the mover and the seconder, and upon being put shall be decided by a show of hands, except in cases of a ballot, which may be demanded by any Member. Should the numbers be equal, the Chairman shall have a second or casting vote. It shall be lawful for the Chairman to postpone or adjourn to the next ordinary meeting of the Council any motion whereof notice signed as aforesaid has not been given to the Secretary at least six clear days before the meeting.	2. No alteration.
3. All resolutions carried at the Meetings of the Council, except such as relate to the making, altering, or abrogating of Bye-laws, shall be acted upon without confirmation.	3. No alteration.
4. The Council may from time to time in their discretion appoint such Committees as shall appear to them expedient, and shall elect from among themselves a Committee of General Purposes, a Committee of Finance, and a Committee for the Library, Museum, School, and House, and may from time to time modify or dissolve any Committee. The President and Vice-President shall be *ex-officio* Members of all Committees, and the President shall preside at all Meetings of the Council and of Committees, or in his absence the Vice-President. If the President and Vice-President are both absent, a Chairman shall be chosen by the Members present.	4. The Council may from time to time in their discretion appoint such Committees as shall appear to them expedient, and shall elect from among themselves a Committee of General Purposes, a Committee of Finance, and a Committee for the Library, Museum, School and House, and may from time to time modify or dissolve any Committee. The President and Vice-President shall be *ex-officio* Members of all Committees, and the President shall preside at all Meetings of the Council, or in his absence the Vice-President. If the President and Vice-President are both absent, a Chairman shall be chosen by the Members present.
SECTION VII. COMMITTEE FOR GENERAL PURPOSES.	SECTION VII. COMMITTEE FOR GENERAL PURPOSES.
1. This Committee shall consist of not less than twelve Members, four of whom shall constitute a quorum. The Committee shall meet as often as may be required, and its proceedings shall be reported to the Council.	No alteration.
SECTION VIII. COMMITTEE FOR FINANCE.	SECTION VIII. COMMITTEE FOR FINANCE.
1. This Committee shall consist of not less than four Members, two of whom shall constitute a quorum. The Committee shall meet as often as may be required.	1. No alteration.
2. It shall be the duty of this Committee to regulate and examine the accounts, to check the receipt of all moneys, to examine all bills, and to present at the monthly meetings of the Council such as shall have been approved for payment, with the signature of a quorum attached. This Committee shall also prepare a Financial Statement for the Auditors previous to the annual meeting.	2. It shall be the duty of this Committee to regulate and examine the accounts, to check the receipt of all moneys, to examine all bills, and to present at the monthly meetings of the Council such as shall have been approved for payment, with the signature of a quorum attached. This Committee shall, previous to the Annual General Meeting, prepare a Financial Statement for the Auditors.
SECTION IX. THE COMMITTEE FOR THE LIBRARY, MUSEUM, SCHOOL, AND HOUSE.	SECTION IX. THE COMMITTEE FOR THE LIBRARY, MUSEUM, SCHOOL, AND HOUSE.
1. This Committee shall consist of not less than five Members, three of whom shall constitute a quorum. The Committee shall meet as often as may be required, and its proceedings shall be reported to the Council	1. No alteration.
2. It shall be the duty of this Committee to superintend the School and the House, the arrangement and preservation of the books, specimens, and apparatus, to inspect the Laboratory, and to make regulations for admission to the Library and Museum.	2. Subject to the approval and sanction from time to time of the Council, it shall be the duty of this Committee to take charge of, and make arrangements for, the management of the Libraries, Museums, School, and premises generally, together with the books, apparatus, specimens, and other property therein contained.
SECTION X. EXAMINERS—EXAMINATIONS—FEES.	SECTION X. EXAMINERS—EXAMINATIONS—FEES.
1. The Council shall, at its meeting, in November, in every year, appoint such competent persons as it shall think fit, to be Examiners for the year, to commence on the then following first day of January, to conduct all such examinations as are provided for or contemplated by the Charter, or by the Statute, 1852, or by the Act, 1868, and the persons so appointed shall, for the time being, constitute and be called the Board of Examiners for England and Wales.	1. No alteration.
2. The Council shall, at its meeting, in November, in every year, appoint such competent persons in Scotland as it shall think fit to be Examiners for the year to commence on the then following first day of January, to conduct all such examinations as are provided for or contemplated by the Charter, or by the Statute, 1852, or by the Act, 1868, and the persons so appointed shall, for the time being, constitute and be called the Board of Examiners for Scotland.	2. No alteration.
3. The President and Vice-President shall, *ex-officio*, be Members of the Boards of Examiners, and either of them present at any meeting of either of such Boards shall preside thereat	3. No alteration.

Present Bye-Laws.	**Proposed Bye-Laws.**
4. The Council shall not appoint any person who has attained the age of sixty-five years at the time of the appointment to be an Examiner.	4. The Council shall not appoint any person to be an Examiner who has attained the age of sixty-five years.
5. No person shall be appointed an Examiner who at the time of appointment is, or who during one year prior to the time of appointment has been, a Member of the Council; and the election of any Examiner to be a Member of the Council shall vacate his appointment as an Examiner.	5. No person shall be appointed an Examiner who at the time of appointment is, or who, during one year prior to such time has been, a Member of the Council; and the election of any Examiner to be a Member of the Council shall vacate his appointment as an Examiner.
6. The Board of Examiners for England and Wales shall consist of not more than fourteen nor less than eight persons, exclusive of the President and Vice-President; six to constitute a quorum. The Board of Examiners for Scotland shall consist of not more than eight nor less than four persons, exclusive of the President and Vice-President; four to constitute a quorum.	6. No alteration.
7. The Council shall from time to time supply any vacancy in the office of Examiner, and may remove any member of the Boards of Examiners, and substitute another person in his place, and may also from time to time appoint a Special Examiner, or Special Examiners, to conduct any examination or part of an examination, or to assist the Boards of Examiners.	7. No alteration.
8. The Secretary shall from time to time submit to the Privy Council for approval, in accordance with the Act, 1868, all appointments of Examiners made by the Council, and shall also give notice to the officer appointed by the Privy Council of all examinations to be held for the purposes of the Act, 1868, stating the times and places at which such examinations will be held, at least three days *prior* to the holding of the same.	8. No alteration.
9. The Board of Examiners for England and Wales and the Board of Examiners for Scotland shall meet as often as may be required for the purpose of conducting examinations at such times as the Council from time to time shall direct; and shall report the result of every examination to the Council at the monthly meeting immediately following the same.	9. No alteration.
10. The Boards of Examiners shall conduct all examinations according to the Bye-laws in force in that behalf, and according to such regulations as shall be made or adopted by them from time to time, and as shall have been approved by the Council. Such regulations shall from time to time be inserted in the *Pharmaceutical Journal.*	10. No alteration.
11. Prior to September, 1900, persons desiring certificates of competent skill and qualification to be registered as Chemists and Druggists under the Act, 1868, shall be examined in their knowledge of the Latin language, in English Grammar and Composition, and Arithmetic, which Examination shall be called the First Examination. Persons intending to present themselves for this Examination shall give to the Registrar notice in that behalf and pay to him a fee of Two Guineas not less than 14 days prior to the day which has been appointed for the holding of the said Examination. All persons who pass the said Examination shall be registered as "Apprentices or Students." After August, 1900, persons desiring certificates of competent skill and qualification to be registered as Chemists and Druggists under the Act, 1868, shall deliver to the Registrar on behalf of the Board of Examiners a certificate of having passed an Examination in English Grammar and Composition, in the Latin language, and in one Modern Foreign language, and also in Algebra, Arithmetic, and Euclid, conducted by any or either of the examining bodies which shall have been previously approved for the purpose by such regulations as are specified by the last preceding Bye-law, and shall pay to him a fee of Two Guineas, whereupon, if the Board of Examiners shall so see fit, they shall be registered as "Apprentices or Students."	11. Persons desiring certificates of competent skill and qualification to be registered as Chemists and Druggists under the Act, 1868, shall deliver to the Registrar on behalf of the Board of Examiners a certificate of having passed an Examination in English Grammar, in the Latin language, and in one Modern Foreign language, and also in Algebra, Arithmetic, and Euclid, conducted by one of the examining bodies which shall have been previously approved for the purpose by such regulations as are specified by the last preceding Bye-law, and shall pay to him a fee of Two Guineas, whereupon, if the Board of Examiners shall so direct, they shall be registered as "Apprentices or Students."
12. Persons presenting themselves to the Examiners for examination in accordance with the Charter and Statute, 1852, or the Act, 1868, and having been registered as "Apprentices or Students," shall be examined in the translation and dispensing of Prescriptions, in Botany, in Materia Medica, in Pharmaceutical and General Chemistry, Physics, and Posology, and in their knowledge of the Law relating to the Sale of Poisons, which Examination shall be called the Minor Examination.	12. No alteration.

Present Bye-Laws.	**Proposed Bye-Laws.**
13. Persons desiring certificates of competent skill and qualification to exercise the business, or calling, of Pharmaceutical Chemists shall produce to the Registrar evidence of having been previously registered as Chemists and Druggists, and shall be examined in more extended knowledge of Botany, Materia Medica, Chemistry, and Physics, or any two of them, which examination shall be called the Major Examination.	13. No alteration.
14. Persons who shall tender themselves to the Examiners for Examination under the provisions of the Act, 1868, excepting only those specified in the next following Bye-law, shall be examined in the Minor Examination.	14. No alteration.
15. Persons entitled to be registered as Chemists and Druggists on passing a modified Examination, who shall tender themselves to the Examiners for Examination under the provisions of the Act, 1868, shall be required to pass the Modified Examination, which the Council, with the consent of the Privy Council, have declared to be in their case sufficient evidence of skill and competency to conduct the business of a Chemist and Druggist, as the same is set out in the Schedule hereto, or such other modified Examination as may in like manner be declared such sufficient evidence.	15. No alteration.
16. The Examiners may grant or refuse to such persons as have tendered themselves for the Minor Examination and the Major Examination respectively, Certificates of Competent skill and knowledge and qualification; and lists of such persons shall be delivered by the Examiners to the Registrar.	16. No alteration.
17. All persons desiring registration as Chemists and Druggists shall, in respect of an examination, to take place prior to September, 1900, pay a fee of Five Guineas, and shall in respect of an examination, to take place after August, 1900, pay a fee of Ten Guineas, and shall in either case pass the Minor Examination or the Modified Examination, whereupon they shall be registered accordingly.	17. All persons desiring registration as Chemists and Druggists shall pay a fee of Ten Guineas, and shall pass the Minor Examination or the Modified Examination, whereupon they shall be registered accordingly.
18. Persons desiring registration as Pharmaceutical Chemists under the Statute, 1852, shall pay a fee of Three Guineas and pass the Major Examination, whereupon they shall be registered accordingly.	18. No alteration.
19. Persons intending to present themselves for examination in the Major, the Minor, or the Modified Examination shall give to the Registrar notice in writing of their intention in that behalf on or before the fifteenth day of the month immediately preceding that in which the Examination is to take place.	19. No alteration.
20. All notices of intention to attend for examination shall be to attend on the next occasion of the Examination being held, and all fees in respect of examination and registration shall be payable on the giving of notice of intention to attend for examination, and in no case shall any fee paid in accordance with the Bye-laws be remitted or returned.	20. No alteration.
21. All persons shall, at the time of giving notice of intention to present themselves for the Minor Examination, satisfy the Registrar that they have attained the full age of twenty-one years, and have been registered as "Apprentices or Students," and that they have for three years been practically engaged in the translation and dispensing of prescriptions.	21. No alteration.
22. Persons who have attended and failed to pass an examination shall not be entitled to attend on any future occasion unless and until they shall have given renewed notice of intention to attend an examination, and shall have paid fees as follows:— (*a*) *In respect of a Major Examination, Two Guineas;* (*b*) *In respect of a Minor Examination, or a Modified Examination, Three Guineas;* (*c*) *In respect of a First Examination, One Guinea.*	22. Persons who have attended the Examination for which they entered, and failed to pass, shall not be entitled to attend on any future occasion unless and until they shall have given to the Registrar renewed notice of intention to attend an examination, and shall have paid fees as follows:— (*a*) *In respect of a Major Examination, Two Guineas;* (*b*) *In respect of a Minor Examination, or a Modified Examination, Three Guineas.*
23. Persons who have given notice of intention to attend an examination, and have failed duly to attend at the time appointed for the same, shall not be entitled to attend on a future occasion unless and until they have given renewed notice of intention to attend an examination, and shall in each case have paid a fee of One Guinea—or if the persons shall have proved to the satisfaction of the Council or the Board of Examiners (by production of medical certificates or otherwise) that the said failure was occasioned by unavoidable and proper causes—One Shilling.	23. Persons who have given notice of intention to attend an examination, and have failed duly to attend at the time appointed for the same, shall not be entitled to attend on a future occasion unless and until they have given renewed notice of intention to attend an examination, and shall in each case have paid a fee of One Guinea—or if the persons shall have proved to the satisfaction of the Council or either of the Boards of Examiners (by production of medical certificates or otherwise) that the said failure to attend was occasioned by unavoidable and proper causes—One Shilling.

Present Bye-Laws.	**Proposed Bye-Laws.**
SECTION XI. REGISTRAR AND REGISTRATIONS.	SECTION XI. REGISTRAR AND REGISTRATIONS.
1. The Registrar shall receive and, for at least five years, preserve the lists issued by the Examiners, signifying that examinations, or parts of examinations, have been passed.	1. The Registrar shall receive and, for at least five years, preserve the lists issued by the Examiners, signifying that examinations have been passed.
2. The Registrar shall from time to time make out and maintain Registers of all persons being respectively Members or Student-Associates of the Society, also a Register of all persons entitled to be registered under the Statute, 1852, and also a Register in accordance with the provisions of the Act, 1868, of all persons who shall be entitled to be registered under that Act, with proper indices of such Registers respectively.	2. The Registrar shall from time to time make out and maintain Registers of all persons being respectively Members or Student-Associates of the Society, also a Register of all persons entitled to be registered under the Statute, 1852, and also a Register in accordance with the provisions of the Act, 1868, of all persons who shall be entitled to be registered under that Act.
3. The names of persons registered as Student-Associates shall, upon their Registration as Chemists and Druggists, be removed from the Register of Student-Associates.	3. No alteration.
4. Persons who have not been examined under the said Statute, 1852, who have been registered as Pharmaceutical Chemists by reason of their election as Members of the Society, and who have not paid life subscriptions, shall pay the annual subscription required from Members; and the names of all such Members as last mentioned who fail to pay their annual subscription before the first day of May in any year shall be omitted from the Register of Pharmaceutical Chemists.	4. Persons who have not been examined under the said Statute, 1852, who have been registered as Pharmaceutical Chemists by reason of their election as Members of the Society, and who have not paid life subscriptions, shall pay the annual subscription required from Members; and the names of all such Members as last mentioned who fail to pay their annual subscription before the first day of April in any year shall be omitted from the Register of Pharmaceutical Chemists.
5. The Registrar shall comply with such Orders or Regulations for regulating the Register to be kept under the Act, 1868, as may from time to time be made by the Council.	5. No alteration.
6. All the said Registers shall be revised annually and laid before the Annual General Meeting of the Society.	6. No alteration.
7. The Registrar shall, in the month of January in every year, at the expense and for the profit (if any) of the Society, cause to be printed and published, and sold, a correct Register, as required by the Act, 1868, and in so doing shall comply with such rules and regulations as may from time to time be in that behalf made by the Council.	7. No alteration.
SECTION XII. TREASURER.	SECTION XII. TREASURER.
1. It shall be the duty of the Treasurer to take charge of all moneys, to pay such accounts as the Council may order by the signature of six Members of the Council in Council assembled, and to render his account at each monthly meeting.	No alteration.
SECTION XIII. SECRETARY.	SECTION XIII. SECRETARY
1. The Secretary shall have authority over the clerks and servants of the establishment, whose wages he shall pay. He shall be in attendance at his office during the hours to be from time to time specified by the Council, and be present at meetings of the Council and Committees, General and Special Meetings, and also at the Evening Meetings. It shall be his duty to superintend the affairs of the Society under the direction of the Council and Committees He shall keep the books of the Society in a neat and orderly manner, shall conduct the correspondence, and issue all summonses, notices and advertisements, take the minutes of all Meetings for business, and read them, and make a report of all matters that come under his cognisance for the information of the Council and Committees. He shall consult and act on the instructions of the President or Vice-President on any business requiring attention, between the various meetings, and be responsible for the safe custody of all the documents and property belonging to the Society which shall be under his control. He shall find security in the sum of £500, and shall receive all subscriptions, fees, and donations, and give a printed receipt for the same, and no other, checking each receipt. He shall promptly pay to the account of the Treasurer at the Society's bankers the amount of moneys so received by him. He shall receive such a sum in advance for current expenses as the Council may order, and account for the same to the Committee for Finance. He shall also superintend the transmission of the *Pharmaceutical Journal*	No alteration.

Present Bye-Laws.	**Proposed Bye-Laws.**
SECTION XIV.	SECTION XIV.
AUDITORS.	AUDITORS.
1. The Auditors shall meet at least one month previous to the Annual General Meeting. It shall be their duty to inspect the Accounts of the Society, and the Financial Statement prepared for them by the Committee for Finance, which must be certified and signed by the Auditors present at the Audit, and presented to the Council not later than at its ordinary meeting in May.	No alteration
SECTION XV.	SECTION XV.
SUMMONSES FOR MEETINGS.	SUMMONSES FOR MEETINGS.
1. All Summonses, Notices, or Advertisements shall be issued by the Secretary, and Summonses, if left at the place of business or residence, or transmitted by post, addressed to the place of business or residence of the person summoned, shall be considered as received.	No alteration.
2. Summonses, Notices, or Advertisements convening Special General Meetings shall be given not less than ten clear days before the day thereby appointed for the Meeting. All other Summonses, Notices, or Advertisements shall be given not less than three clear days before the day thereby appointed for the Meeting, and in all the said cases there shall appear notice of the general nature of the business to be discussed at the Meeting.	No alteration.
SECTION XVI.	SECTION XVI.
FILLING UP VACANCIES BY DEATH, RESIGNATION, OR REMOVAL.	FILLING UP VACANCIES BY DEATH, RESIGNATION, OR REMOVAL.
1. In the event of any vacancy occurring in the office of President, Vice-President, or Treasurer, the Secretary shall report the same, and the cause thereof, in the summons for the next meeting of the Council, which meeting shall thereupon find and declare such vacancy, and immediately proceed to elect one of its number to fill such vacant office.	No alteration.
2. In the event of any casual vacancy occurring in the Council or in the Auditors, or in the several Committees, the Secretary shall report the vacancy in the summons for the next meeting of the Council, and at such meeting some member of the Council, or of the Society, as the case may require, shall be appointed to fill the vacancy, but any person so appointed shall retain his office so long only as the member causing the vacancy would have held the same if the vacancy had not occurred.	No alteration.
3. In the event of a vacancy occurring in the office of Registrar or Secretary, the President or Vice-President shall appoint some person, *pro tempore*, to fulfil the duty of the office, and in the summons for the next meeting of the Council the vacancy shall be declared; and some person or persons being proposed and seconded at such meeting the election shall take place, but shall not be final, unless confirmed at the next meeting of the Council.	No alteration.
SECTION XVII.	SECTION XVII.
REMOVAL OF OFFICERS AND MEMBERS.	REMOVAL OF OFFICERS AND MEMBERS.
1. Every Member of Council who shall commit any act or acts which appear to the Council derogatory to the honour of his office shall give an explanation of the same to the Council, on being required to do so; and in default thereof, or if such explanation be unsatisfactory to the Members present, he shall be liable to the censure of the Council; or, if it be deemed expedient, a notice may be given by any Member of the Council for a motion of removal from the Society of the Member so offending, which notice shall be inserted in the summons for the ensuing meetings of the Council until disposed of, and shall be taken into consideration at the first ensuing meeting of the Council at which not less than twelve Members thereof shall be present.	No alteration
2. If any report be made to the Council by a Member of the Society in writing, with his name attached, that another Member or a Student-Associate has been guilty of any act or conduct which is contrary to, or subversive of, the interests of the Society, or a violation of its laws and regulations, and if the Council be of opinion that the alleged act or conduct is of such character, the Secretary shall write to the Member or Student-Associate so accused for an explanation, and in default of explanation, or if the same be unsatisfactory, two Members of the Council shall be deputed to communicate, personally or by letter, with such Member or Student-Associate, and shall report the result to the Council, when any	No alteration.

Present Bye-Laws.	**Proposed Bye-Laws.**
Member of the Council shall, if he think it expedient, give notice of a motion for the removal of such Member or Student-Associate from the Society. This notice must be inserted in the summons for the ensuing meetings of the Council until disposed of; and be taken into consideration at the first meeting thereof at which twelve members are present.	
3. Any Member or Student-Associate desiring to retire from the Society shall send notice thereof to the Secretary in writing, together with the Certificate of Membership, if any, held by him. No Member shall be released from his obligation to pay his annual subscription until such time as the Certificate of Membership, if any, shall have been returned.	No alteration.
SECTION XVIII. FUNDS AND PROPERTY.	SECTION XVIII. FUNDS AND PROPERTY
1. The whole property of or under the control of the Society shall be subject to the management, direction, and control of the Council, and may, under the direction of the Council, be invested in or upon mortgage of property or Securities for the time being, from time to time recognised by lawful authority as proper for investment by Trustees.	No alteration.
2. The property and funds of the Society, other than moneys from time to time in the hands of the Treasurer or Secretary, shall not be disposed of, or otherwise dealt with, except in pursuance of an order of the Council signed by six Members, at the least, in Council assembled.	No alteration.
SECTION XIX. BENEVOLENT FUND.	SECTION XIX. BENEVOLENT FUND.
1. The Benevolent Fund shall consist of donations and subscriptions, and such grants as may from time to time be made by the Council from the General Fund towards the particular objects of such Fund, in addition to the sum already invested in respect of the same Fund.	No alteration.
2. Donations* in aid of the Benevolent Fund shall be invested; and no part of the invested capital of such Fund shall be distributed among the recipients of relief.	No alteration.
3. The interest accruing from the invested portion of the Benevolent Fund, together with annual subscriptions and grants made from the General Fund in aid thereof, shall be applicable, in the discretion of the Council, towards the relief of persons eligible to receive the same according to the provisions of the Act, 1868, and any unapplied portion of the same in any year may be invested and thenceforward form part of the invested Fund.	No alteration.
SECTION XX. ANNUAL AND SPECIAL GENERAL MEETINGS.	SECTION XX. ANNUAL AND SPECIAL GENERAL MEETINGS.
1. The Council shall prepare a Report of its proceedings during the past year, which, together with the Report of the Auditors, shall be read at the Annual General Meeting, and inserted in the *Pharmaceutical Journal.*	No alteration.
2. The Council shall meet previous to the Annual General Meeting, and arrange the business to be transacted thereat; and the proceedings of the Annual General Meeting shall be considered perfect in themselves without the necessity of reading or confirming the minutes of the preceding Annual General Meeting.	No alteration.
3. No business shall be brought forward at any Special General Meeting but that for which it is convened, and of which due notice has been given to the Members, pursuant to the preceding Bye-law, No. 2, under Sec. 15.	No alteration.
SECTION XXI. DIPLOMA AND CERTIFICATES.	SECTION XXI. DIPLOMA AND CERTIFICATES.
1. Every Member shall, whilst a Member, be entitled to possess and use a Certificate of Membership.	No alteration.

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*FORM OF BEQUEST.

TO THE BENEVOLENT FUND.

"*I give and bequeath the sum of* *unto the* Pharmaceutical Society of Great Britain, *the same to be paid out of my pure personal estate, and to be applied for the purposes of the* Benevolent Fund *of the said Society.*"

N.B.—Devises of land and bequests of money savouring of realty or in other words connected in any way with land, will be void

Present Bye-Laws.	**Proposed Bye-Laws.**
2. Persons registered as Pharmaceutical Chemists under Section 10 of the Statute, 1852, shall, whilst so registered, be entitled to possess and use a Diploma stamped with the Seal of the Society.	No alteration.
3. Persons examined in the Minor or in the Major Examination pursuant to the Bye-laws may, after having passed their examination and been registered, receive appropriate Certificates.	No alteration.
4. Diplomas and Certificates of Membership and Certificates of Examination shall be in such form as shall from time to time be determined upon by the Council.	No alteration.
5. Every person ceasing to be a Pharmaceutical Chemist or a Member, and every person required so to do by Resolution of the Council, shall forthwith deliver up to the Society the Certificate of Membership furnished to him, pursuant to the Bye-laws.	No alteration.
6. All persons pirating or imitating or improperly using, or inciting any person to pirate, imitate, or improperly use, any Diploma, or any or either of the Certificates, or the Common Seal of the Society, or falsely holding themselves forth to the public by means of advertisement, handbills, labels, circulars, or otherwise, as Members, or registered under the Statute, 1852, or Act, 1868, or as Student-Associates, will be subject to legal proceedings, and the Council may from time to time order the same in its discretion.	No alteration.
SECTION XXII. JOURNAL AND TRANSACTIONS.	SECTION XXII. JOURNAL AND TRANSACTIONS.
1. The *Pharmaceutical Journal* shall be edited, printed, and published in such manner as the Council shall from time to time direct.	No alteration.
2. The Transactions of the Society required to be published, shall be inserted in the said Journal, and all notices or advertisements shall be considered duly made or given if inserted therein.	No alteration.
SECTION XXIII. MEETINGS FOR THE READING OF PAPERS.	SECTION XXIII. MEETINGS FOR THE READING OF PAPERS.
1. Meetings of the Society may be held for the reading of papers and discussion of subjects relating to the scientific objects of the Society.	No alteration.
2. Notice of such Meetings shall be given in the *Pharmaceutical Journal*.	No alteration.
3. All communications intended to be made at such Meetings shall be submitted to the President, or, in his absence, to the Vice-President, or to the Chairman of the Meeting, for his sanction, and without such sanction no subject shall be introduced.	No alteration.
SCHEDULE. THE MODIFIED EXAMINATION FOR ASSISTANTS UNDER THE PHARMACY ACT, 1868.	SCHEDULE. THE MODIFIED EXAMINATION FOR ASSISTANTS UNDER THE PHARMACY ACT, 1868.
Candidates will be examined in the following subjects:— PRESCRIPTIONS. Candidates will be required to read Autograph Prescriptions, translate them into English, render a correct Translation of the Directions for Use, and detect Unusual Doses. PRACTICAL DISPENSING. To weigh, measure, and compound Medicines, write the Directions in suitable language, finish and properly direct each Package. MATERIA MEDICA AND QUALITY OF SPECIMENS. To recognise the Pharmacopœia Chemicals in frequent demand, and specimens of Roots, Barks, Leaves, Fruits, Resins, and Gums in ordinary use; the following Plants, either in a fresh or dried state, or from plates:—Belladonna, Stramonium, Hyoscyamus, Conium, Aconitum, Digitalis, and Sabina; also to estimate the quality of each specimen submitted, and its freedom from adulteration. PHARMACY. To recognise the Preparations of the Pharmacopœia which are not of a definite Chemical Nature, such as Extracts, Tinctures, and Powders, and give the proportions of the more active ingredients. ——— Candidates will also be examined in their knowledge of the law relating to the Sale of Poisons.	No alteration.

PHARMACEUTICAL SOCIETY.

OFFICIAL NOTICES.

EVENING MEETING IN LONDON.

At the Evening Meeting to be held at 17, Bloomsbury Square, London, on Tuesday, April 15, the President in the Chair, the following papers will be read:—

"CHINESE DRUGS,"

By Dr. Augustine Henry, M.A., L.R.C.P.,
Corresponding Member of the Society.

"Note on Citrine Ointment," by P. W. Squire, F.L.S.

The Chair will be taken at Eight o'clock precisely. Members and Student-Associates of the Society and their friends are cordially invited to attend.

THE ANNUAL DINNER

OF THE MEMBERS OF

THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN

AND THEIR FRIENDS

Will be held on Tuesday, May 27, 1902, at the Whitehall Rooms, Hôtel Métropole, at 7 o'clock.

Tickets, One Guinea each (including wine), can only be obtained from the Honorary Secretary to the Dinner Committee, 17, Bloomsbury Square, W.C.

A full list of Stewards will be published shortly.

COUNCIL EXAMINATION PRIZES.

April, 1902.

Pharmaceutical Chemists who were Members of the Society at the time of passing the Major Examination are entitled to compete for the following prizes at the competition next following the date on which they passed the Major Examination:—

First Prize.—Pereira Medal in silver, and a present of books value £5, or thereabouts, given by the late Thomas Hyde Hills in memory of Jacob Bell.

Second Prize.—The Pharmaceutical Society's Medal in silver.

Third Prize.—The Pharmaceutical Society's Medal in bronze.

Subjects of Examination—Materia Medica; Botany; and Chemistry.

The next competition takes place on Friday, April 18, and no person will be admitted to compete unless he shall have given notice of his intention to the Secretary on or before Monday next, April 14.

The Examination is a written one, and competitors may be examined in London or in Edinburgh.

SOCIETY AND ASSOCIATION NEWS.

Blackpool and Fylde Chemists' Association.—At a meeting of this Association, held on Tuesday, April 8, Mr. Turver, Vice-President, in the chair, the subject of early closing and the Pharmaceutical Society's Benevolent Fund were considered. A report of the meeting is held over till next week.

Exeter Association of Chemists and Druggists.—The annual meeting of this Association was held on Tuesday, April 8, Mr. E. Lemmon presiding. Various matters of pharmaceutical interest were discussed. A report of the proceedings will be published next week.

Pharmaceutical Society.—At a meeting to be held at 17, Bloomsbury Square, London, on Tuesday next, at 8 p.m., Dr. Augustine Henry is to read a paper on "Chinese Drugs," which will be illustrated with lantern slides, showing the districts where medicinal plants are collected in China. If time permit, a note on "Citrine Ointment" will also be communicated by Mr. P. W. Squire.

COMPANY INTELLIGENCE.

County Mineral Water Company, Limited.—This company was registered on March 19, with a capital of £2,500, in £1 shares (1,000 preferred), to take over the businesses of mineral water manufacturers carried on as Hooper and Co., at Ryecroft Street, Cheltenham, Gloucester, and as N. A. Lockstone and Co. at Swindon Road, Cheltenham, and to carry on the business of chemists, drug merchants, etc. No initial public issue. The first directors (to number three) are G. Seaman, W. Hooper, and A. Baker. Registered office, Ryecroft Street, Cheltenham.

Bayard, Fils et Bayard, Limited.—This company was registered on March 7 with a capital of £25,000, in 10,270 £1 preference shares, 1,300 £10 ordinary shares, and 173 deferred shares of £10 each, to acquire the business of soap and perfumery manufacturers as carried on by the Standard Soap and Perfumery Company, Limited, at Scrubbs Lane, Willesden Junction; to adopt two agreements with the said Standard Soap and Perfumery Company, Limited, and E. H. Bernard; to acquire the business of manufacturing chemists now carried on by Bayard, Sons and Bayard, Limited; to adopt an agreement with the said company, and generally to carry on business as soap and perfumery manufacturers, wholesale and retail chemists, druggists, drysalters, oil and colourmen, etc. No initial public issue.

Natural Food Company, Limited.—This company was registered on April 1, with a capital of £1,000 in £1 shares, to adopt agreements with T. R. Allinson, L.R.C.S., and P. Tyrer for the acquisition of the business carried on under the style of the Natural Food Company, at 21a, Patriot Square, Cambridge Heath, Essex, and to carry on business as manufacturers of and dealers in articles of food, natural or manufactured, condensed, prepared, or combined with any other preparation, medicinal or otherwise; as general chemists and druggists, dealers in proprietary articles. No initial public issue. Table A mainly applies. The directors are T. R. Allinson, P. Tyrer, and H. S. Young. Qualification, £1. Remuneration, none, except P. Tyrer, as managing director, with remuneration of £1 1s. for each board attendance.

Shaws (Huddersfield), Limited.—This company was registered on March 27, with a capital of £5,000 in £1 shares, to acquire the business of wholesale druggists and general merchants as now carried on by George Shaw, at Half Moon Street and Bank Works, Outcote Bank, Huddersfield, as George Shaw and Sons, to adopt an agreement with the said George Shaw, W. Shaw, and V. Shaw, and to carry on the general business of chemists and druggists, wholesale and retail druggists, drysalters, smallware dealers, paint grinders and dealers, varnish manufacturers, manufacturers of and dealers in electrical, chemical, photographic, surgical, and scientific apparatus and materials. Minimum subscription, 10 shares. The directors are G., W., and V. Shaw. Qualification, 100 shares. Remuneration to be fixed by the company. Registered office: Half Moon Street, Huddersfield.

PERSONALITIES, BUSINESS CHANGES, ETC.

Readers are requested to send items of local news of general pharmaceutical interest. When newspapers are sent, the passages of interest should be marked.

Mr. David Hooper, F.C.S., of Calcutta, has been appointed to act as Assistant Agricultural Chemist to the Government of India, at Dehra Dun, during Dr. Leather's furlough to Europe for six months.

Mr. Thomas Farnsworth, Ph.C., Codnor, near Derby, has been re-elected (unopposed) as Poor Law Guardian for the parish of Codnor-cum-Losooe, a position he has held for the past nine years.

Mr. James E. Dennis, M.P.S., son of the late senior partner of Dennis and Roberts, Nottingham, has purchased the business lately carried on by Mr. Fred Coates, 58, Radford Road, Nottingham.

Mr. Edgar M. Chapman, A.I.C., F.C.S., M.P.S., formerly Burroughs, and Salters' Fellow in the Pharmaceutical Society's Research Laboratory, has commenced practice in Scarborough as an analytical chemist, and will also act as chemist to the old-established mineral water firm in Scarborough of Henry Chapman.

TRADE NOTES AND NOVELTIES.

Ilex Cameras.—Mr. A. C. Jackson, Northwold Road, Stoke Newington, sends his photographic list for 1902, in which are given particulars of the Ilex cameras. Those cameras are made in a variety of styles, suitable for different purposes, and appear well worthy of attention.

Advertisement Literature.—Messrs. James Townsend and Son, Exeter, are offering a variety of artistic circulars for the photographic trade, specimens of which will be sent free on application. The same firm is supplying some extremely tasteful labels for developers, toning solutions, fixing baths, mountants, etc.

Vinolia in Vaccination.—A number of medical men have advised the Vinolia Co., Limited, that they found if Vinolia powder was applied at the time of vaccination and the spots kept from the air, the vesicles dried up without the sores suppurating. The firm has also had a number of letters from persons vaccinated, whose sores were accompanied by pain and great irritation, reporting that they found free applications of Vinolia cream afforded them more ease and comfort than they had been able to obtain from any other emollient.

Friedrichshall Mineral Water.—We are informed by Messrs. C. Oppel and Co., proprietors of Friedrichshall, that, their contract with the Apollinaris Company having terminated by effluxion of time, they have opened their own London offices at 10 and 12, Milton Street, E.C., under the management of Mr. G. Greiner. Ample stocks will be kept in the United Kingdom, and the water will be persistently kept under the notice of medical men. Chemists may therefore anticipate an increased demand for this well-known natural aperient water.

Purgatin and Triferrin.—Mr. B. Kühn, 36, St. Mary-at-Hill, Eastcheap, London, E.C., has submitted to notice two new preparations which he is just introducing to the medical profession. Purgatin is a mild purgative, synthetically derived from the series of oxyanthra-quinones to which the active constituents of aloe, cascara sagrada, rhubarb, senna, etc., belong. Triferrin (paranucleinate of iron) contains 22 per cent. iron and 2½ per cent. natural phosphorus in organic combination, both interesting pharmaceutical products to be placed before our readers. Both preparations have been carefully examined, and their properties tried for the last two years on the Continent, the reports submitted showing the most satisfactory results.

Apomorphine Compound Tabloids.—As is well known, apomorphine, in small doses, frequently repeated, is used internally in the treatment of certain affections of the respiratory organs; and it is said to be of especial value in cases of chronic bronchitis, bronchorrhœa and whooping cough. A useful combination is presented in Apomorphine Compound Tabloids, in which the action of the apomorphine is aided by the stimulant-expectorant properties of ammonium chloride and by the demulcent qualities of extract of liquorice. One may be slowly dissolved in the mouth, or swallowed with a little water, every hour or every other hour as the symptoms of the patient may indicate. Each tabloid contains: Apomorphine hydrochloride, 1/50 gr.; ammonium chloride, 3 gr.; extract of liquorice, 1½ gr. Messrs. Burroughs Wellcome and Co. supply the tabloids in bottles containing 25 or 100.

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

George Alexander Cohen and Hugh Brooming Taylor Morgan, surgeons, 17, Grand Parade, Harringay. Debts will be received and paid by G. A. Cohen.

Harry Pike Major and Walter Dickson, general medical practitioners, Hungerford.

Arthur Roper and Edgar Huntley, physicians, surgeons, and general medical practitioners, Lewisham. Debts will be received and paid by A. Roper.

William Astley Cooper and Francis Dugon, general medical practitioners, 17, Ilderton Road, Rotherhithe.

Thomas Farrington and Hargreaves Pollard, trading as the Victoria Chemical Co., manufacturing chemists, Victoria Chemical Works, New Mills. Debts will be received and paid by H. Pollard.

RECEIVING ORDERS IN BANKRUPTCY.

Angus Ross Kennedy, physician and surgeon, 4, Albany Road, Coventry.

John Leach, sen., chemist, Crawley, Sussex.

Metric Measures of Volume with Imperial Equivalents.

The Litre (L.) equals 1·7598 pint, and was originally the volume of a cubic decimetre of water at 4° C., its point of greatest density; the Board of Trade standard litre is the volume of a kilogramme weight of water at 4° C., and the millilitre, or cubic centimetre (C.c.) as it is often incorrectly termed, is the volume of a gramme weight of water at the same temperature.

The subdivisions of the litre are the

Decilitre (Dl.) = 0·100 L. = 0·1759 pint.
Centilitre (Cl.) = 0·010 L. = 0·0176 pint.
Millilitre (Ml.) = 0·001 L. = 0·0352 fl. oz.
Microlitre (Mcl.) = 0·001 Ml. = 0·0169 minim.

The multiples of the litre are the

Dekalitre (Dkl.) = 10·0 L. = 2·19975 gallons.
Hectolitre (Hl.) = 100·0 L. = 2·74969 bushels.
Kilolitre (Kl.) = 1000·0 L. = 3·43712 quarters.

Conversion of Metric to Imperial Units.

Millilitres × 16·894 = Minims.
Millilitres ÷ 0·059 = Minims.
Millilitres × 0·282 = Drachms (fl.)
Millilitres ÷ 3·552 = Drachms (fl.)
Millilitres × 0·035 = Ounces (fl.)
Millilitres ÷ 28·412 = Ounces (fl.)

Litres × 35·196 = Ounces (fl.)
Litres ÷ 0 028 = Ounces (fl.)
Litres × 1·759 = Pints.
Litres ÷ 0·568 = Pints.
Litres × 0·219 = Gallons.
Litres ÷ 4·545 = Gallons.

Conversion of Imperial to Metric Units.

Minims ÷ 16·894 = Millilitres.
Minims × 0·059 = Millilitres.
Drachms (fl.) ÷ 0·282 = Millilitres.
Drachms (fl) × 3·552 = Millilitres.
Ounces (fl.) × 28·412 = Millilitres.
Ounces (fl.) ÷ 0·035 = Millilitres.

Ounces (fl.) ÷ 35·196 = Litres.
Ounces (fl.) × 0·028 = Litres.
Pints ÷ 1·759 = Litres.
Pints × 0·568 = Litres.
Gallons ÷ 0·219 = Litres.
Gallons × 4·545 = Litres.

MARKET REPORT.

London, Thursday, April 10, 1902.

Business in Drugs and Chemicals has not been very brisk during past few days. Anticipations respecting the coming Budget have tended to occupy attention, as also in some degree to check business, and while under any circumstances the drug trade can hardly be in any way seriously affected by any new burdens which the Chancellor of the Exchequer in his wisdom, or, rather, to write more correctly, in his need, may think fit to impose on the patient back of long-suffering John Bull, still the tension, increased by the unexpected delay in making known the Budget proposals as to the new taxes, has had a somewhat depressing influence. Quinine has had a rise of just another halfpenny, *parturient montes nascetur ridiculus mus.* This following on a second advance in value of Cinchona Bark, as evinced by the result of the Amsterdam Bark Sales, has rather disheartened speculators in Quinine, but the more sanguine are predicting a continued falling off in the monthly shipments of Bark from Java, and then—well, then we shall see what we shall see. Beyond that high prices continue to be asked for Cod Liver Oil, coupled with the fact that Shellac, after a decided rise, has quieted down again a little, there are no changes of any special importance to record. We give below a few ruling quotations for some articles of chief interest:—

ACETANILIDE—Very dull and weak at 8d. to 10d. per lb., according to make, quantity, and packing.

ACID CARBOLIC—Quiet and unchanged both as regards the crude and the refined article, the latter being quoted on basis of 6½d. to 7d. per lb. for the 34-35° ice crystal, according to quantity and make, in large bulk packing.

ACID CITRIC—Is very quiet at 1s. 0¼d. to 1s. 0½d. per lb., according to quantity and make, for crystals in 5-cwt. casks.

ACID TARTARIC.—English on spot is quoted 11¼d. to 11½d. per lb., and foreign 10½d. per lb.

ALUM.—Lump, £5 10s. to £5 12s. 6d., and Ground, £6.

ANTIMONY.—English Regulus is quoted £29 to £29 15s. per ton.

ATROPINE.—The German makers quote 16s. 8d. per oz. for the Sulphate, and 19s. 3d. per oz. for the pure alkaloid, with a reduction for larger contracts.

BENZOLE—Quiet. 50 per cent., prompt, 7½d.; 90 per cent., 8½d., London.

BISMUTH SALTS—Are unchanged at 5s. 5d. per lb. for the subnitrate and 5s. 11d. per lb. for the subcarbonate.

BROMIDES—Continue in good demand at firm prices, viz., 1s. 11½d. per lb. for potassii bromid., 2s. 2½d. per lb. for sodii bromid., and 2s. 3d. per lb. for ammon. bromid. Bromine is also unchanged at 2s. 2d. to 2s. 4d. per lb., according to quantity.

CAFFEINE—Is fairly steady at 12s. 6d. per lb. for pure cryst., and 8s. 9d. per lb. for the citrate, B.P.

CAMPHOR.—Business has been done at 145s. per cwt., c.i.f., for 100 piculs Japan Crude for March-April shipment, and at 140s. for 100 piculs further forward. English refiners still quote 2s. 3½d. per lb. for Bells and Flowers, and proportionate prices for Tablets, according to size.

CINCHONA BARK.—The third of the series of Dutch auctions was held in Amsterdam on the 3rd inst. The reduced supply of 6,780 packages was brought forward, as compared with 8,467 packages at the previous sale, and 6,832 packages at the corresponding sale last year. There was again a good demand, and about three-fourths of the offerings found buyers at a further advance of 8 per cent., the average unit obtained being 8·60 cents, against 7·95 cents at the preceding sale, and 8·95 cents at the corresponding sale a year ago. This result is equivalent to 1 9/16d. London parity, against 1 7/16d. last sale. The Quinine contents of the sale were 30,294 kilos, of which 6,020 kilos were bought in.

COD LIVER OIL.—The agents for the refiners continue to quote extravagant prices for this article up to 110s., and even nominally 120s. per barrel for best new non-congealing Norwegian oil, in tin-lined barrels of 25 gallons, but only those buyers who have absolutely pressing immediate requirements have been found willing to pay the prices asked, and which it is thought can hardly be definitely maintained.

CODEINE.—Market is quiet. Makers still quote 12s. 3d. per oz. for the pure alkaloid in quantity, 10s. 9d. per oz. for the Muriate and Sulphate, and 9s. 6d. per oz. for the Phosphate Salt.

ESERINE (PHYSOSTIGMINE)—Is still quoted 5s. per gramme for the Sulphate and Salicylate Salts, and 6s. per gramme for the pure alkaloid.

GLYCERIN.—Crude continues very firm, as also is the refined article, price being unchanged at 67s. per cwt. for the 1,260 S.G. quality in tins and cases, for 5-ton contracts.

IODIDES—Are so far still unchanged at 8s. 9d. per lb. for Potassii. iodid., 9s. 10d. per lb. for Sodii. iodid., 12s. 6d. per lb. for Ammon. iodid., 11s. 8d. per lb. for Iodoform crystals, powder, or precipitated, 10s. per lb. for Iodine resublimed, and 6d. per oz. for commercial Iodine.

MENTHOL—Is quiet at nominally unchanged price, viz., 13s. 6d. to 14s. per lb., according to quantity, for Kobayashi crystals.

MERCURIALS.—In good demand, at firm prices, this being especially the case with corrosive sublimate, for which there is a very active inquiry, makers being behindhand with deliveries. Prices remain meantime unchanged at 3s. 0½d. per lb. for calomel, 2s. 8½d. per lb. for corrosive sublimate, 3s. 4½d. per lb. for red precipitate, and 3s. 7d. per lb. for white precipitate.

MORPHINE—Continues very quiet. Makers quote 4s. 3d. per oz. for the Hydrochlorate Powder and 2d. per oz. more for the Crystalline Salt.

OPIUM—Is very quiet, with very little business passing, value being nominally unchanged, or rather, if anything, just a trifle easier. The receipt of reliable reports as to the new crop will decide whether the article recedes or advances. A decline in value is considered, however, the more probable.

PHENACETIN.—The combined makers still quote 4s. 3d. to 4s. 9d. per lb., according to quantity, for both crystals and powder in bulk packing.

PILOCARPINE.—The combined German makers still quote 70s. per oz. for the Muriate and Nitrate Salts in 8 oz. lots, while there are sellers of outside makes at something below this figure.

QUICKSILVER—Is unchanged at £8 15s. per bottle from the importer. Second-hand does not offer.

QUININE.—Late last week the German makers advanced price of the Sulphate another halfpenny per oz., and now quote 1s. 3d. per oz. for the Sulphate for 1,000 oz. lots in 100 oz. tins. These trifling advances have had rather a chilling effect on the speculative market, which remains very quiet, with buyers of B&S and/or Brunswick spot 1s. 2⅛d., June 1s. 2¼d., and August 1s. 2⅜d., with a few sellers at about ¼d. per oz. above these figures. The general opinion is that we shall ere long see higher prices ruling for Quinine.

SANTONINE.—The advance in price which some people expected has so far not come off, and price remains unchanged at 18s. per lb. (down to 16s. 9d. for 2 cwt. lots).

SPICES.—Cloves: 51 bales Zanzibar bought in at 3⅞d. to 4d., also 50 bags unpicked Amboyna at 5¾d. Ginger: Of Cochin only 31 cases sold, without reserve, fair medium, some small cut and scraped at 55s. 6d.; fair washed rough taken at 40s. Jamaica in fair demand, and 525 packages sold, middling to fair bright at 45s. to 52s., ordinary to good ordinary at 37s. 6d. to 44s. Black Pepper all bought in, Singapore at 5⅞d., Tellicherry 6⅛d., Aleppy 5½d. White Pepper: Singapore bought in at 9¾d. to 11½d., and Penang at 9¾d. Chillies: 37 bales Japan sold, sea damaged, at 21s. to 25s. 6d.; sound bought in at 35s. to 37s. 6d. Capsicums: 35 bales Bombay bought in at 27s., and 30 bags Ceylon long bright off stalk at 50s. Cassia Lignea: 200 cases bought in, new selected at 55s. Nutmegs quiet. Mace dull, 2 cases Penang bought in at 1s. 5d. for fair palish; 5 cases West India sold, fair palish at 1s. 4d., reddish at 1s. 2d., and broken at 1s. 1d. Pimento: Of 554 bags only 28 sold at 2¾d. to 3d.

SULPHONAL.—Bayers' make can still be bought, in limited quantity only, however, at 5s. per lb. for both crystals and powder.

SULPHATE OF AMMONIA.—Quiet. Grey, 24 per cent., London prompt, £12. Hull prompt, £11 16s. 3d. to £11 17s. 6d. Leith prompt, £11 18s. 9d. to £12. Beckton prompt, £12; May-September, £11 10s. Beckton, terms prompt quoted £11 15s.

THYMOL—Very dull, with sellers at 7s. 6d. to 8s. per lb., according to quantity and make.

TURPENTINE—Is firm at 31s. 3d. to 31s. 4½d. for American on the spot, 31s. 6d. to 31s. 9d. for May-August, 32s. 1½d. for December, and 32s. 9d. for January-April.

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PUBLICATIONS RECEIVED.

BERICHT VON SCHIMMEL AND CO. (Inhaber Gebr. Fritzsche) in Miltitz bei Leipzig. Fabrik äther. Oele, Essenzen und Chemischer Präparata, April, 1902.

THE DENTISTS' REGISTER. Printed and Published under the Direction of the General Council of Medical Education and Registration of the United Kingdom. 1902. Pp. 246. Price 3s. 4d. London: Spottiswoode and Co., Ltd., 54, Gracechurch Street, E.C. From the General Medical Council.

AN INTRODUCTION TO DERMATOLOGY. By NORMAN WALKER, M.D., with 43 full-page plates and 47 illustrations in the text. Second Edition. Revised and Enlarged. Pp. xvi. + 301. Price 9s. 6d. net. Bristol: John Wright and Co. 1902. From the Publishers.

MARPMANN'S ILLUSTRIRTE FACHLEXIKA. Parts 9 and 10. Chemisch-Analytische Technik und Apparatenkunde. Price M. 1.50 each part. Leipzig: Paul Schimmelwitz. From the Publisher.

CONTRIBUTIONS TO PRACTICAL MEDICINE. By Sir JAMES SAWYER, Knt., M.D.Lond., F.R.C.P.Lond. Third Edition, Revised and Enlarged. Pp. 209. Price 2s. 6d. net. Birmingham: Cornish Brothers. 1902. From the Author.

THE IDLER, April, 1902. Price 6d. London: Dawbarn and Ward, Ltd., 6, Farringdon Avenue, E.C. From the Publishers.

MARRIAGES.

KEALL—EVANS.—At York Place Chapel, Swansea, on April 3, by the Rev. Casnodyn Rhys, Mr. A. A. Keall, M.P.S., son of Mr. F. P. Keall, to Miss Emily Evans, daughter of Mr. Henry Evans, Swansea.

POLLARD-CUMMINGS.—April 3, 1902, at Wentworth Park Chapel, Finchley, Evelyn William Pollard, B.Sc. (Lond.), Ph.C., M.P.S., of Ryde, to Emilie Mary, only daughter of the late Rev. J. H. Cummings, formerly of Mysore.

DIARY OF THE WEEK.

Monday, April 14.

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION, Church House, Church Street, at 8.30 p.m.—President's Address; Martindale Memorial; and Council Election.

Tuesday, April 15.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, London.—Library, Museum, School, and House Committee.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, London, at 8 p.m.—Evening Meeting.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle Street, Piccadilly, W., at 3 p.m.—"Recent Methods and Results in Biological Inquiry," by Dr. Allan Macfadyen.

Wednesday, April 16.

NORTH-EAST LANCASHIRE CHEMISTS' ASSOCIATION, White Bull Hotel, at 9.15 p.m.—Discussion on the Apprentice Question, and other Business.

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover Square, W., at 7.30 p.m.—An Exhibition of Pond Life.

SHEFFIELD PHARMACEUTICAL AND CHEMICAL SOCIETY, Literary and Philosophical Society's Rooms, Leopold Street, W., at 8.30 p.m.—"Historical Notes on Sheffield Druggists," by John Austen.

WESTERN CHEMISTS' ASSOCIATION (OF LONDON), Westbourne Restaurant, Craven Road, Paddington, W.—Smoking Concert.

Thursday, April 17.

CHEMICAL SOCIETY, Burlington House, Piccadilly, W., at 8 p.m.—"Oxonium Salts of Fluoram and its Derivatives," by J. T. Hewitt and J. H. Tervet; "The Influence of Certain Acidic Oxides on the Specific Rotations of Lactic Acid and Potassium Lactate," by G. G. Henderson and D. Prentice; "The Amounts of Nitrogen as Ammonia and as Nitric Acid, and as Chlorine in the Rain-water Collected at Rothamsted," by N. H. J. Miller; "The Amounts of Nitrogen as Nitrates and Chlorine in the Drainage through Uncropped and Unmanured Land," by N. H. J. Miller.

CHEMISTS' MANAGERS' AND ASSISTANTS' SOCIETY OF GREAT BRITAIN.—Visit to the Crown Perfumery Co.'s Works. Members will meet at the Bank Station at 3.30 p.m.

CHEMISTS' ASSISTANTS' ASSOCIATION, 73, Newman Street, W., at 8.30 p.m.—Exhibition and Short Paper Evening.

LINNEAN SOCIETY (OF LONDON), Burlington House, Piccadilly, W., at 8 p.m.—"The Anatomy of *Todea*, with Notes on the Affinity and Geological History of the *Osmundaceæ*," by Prof. A. C. Seward and Miss Sybil O. Ford; "On the New Zealand Phyllo-branchiate Crustacea Macrura," by G. M. Thomson.

NOTTINGHAM AND NOTTS. CHEMISTS' ASSOCIATION, Victoria Hotel, at 7.30 p.m.—Annual Dinner.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle Street, Piccadilly, W., at 3 p.m.—"The Oxygen Group of Elements," by Prof. Dewar.

Notices to Correspondents.

ALL COMMUNICATIONS FOR THE 'PHARMACEUTICAL JOURNAL' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street Lincoln's Inn, London.

CONTRIBUTIONS sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

CORRESPONDENTS should write in ink, on one side of the paper only, and must authenticate the matter sent with their names and addresses, though not necessarily for publication. No notice can be taken of anonymous communications.

DRAWINGS FOR ILLUSTRATIONS should be executed twice the desired size, clean sharp lines being drawn with a pen and liquid Chinese ink. Shading by washes is inadmissible. Photographs can be utilised in certain cases.

NAMES AND FORMULÆ should be written with extra care, all systematic names of plants and animals being underlined, and capital letters used to commence generic but not specific names.

REPRINTS OF ARTICLES cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Alcock, Antcliffe, Ashton, Bott, Bradshaw, Burrell, Bustard, Campkin, Coleman, Cowdery, Dallinger, Durant, Eberlin, Fidler, Fox, Gamble, Gill, Gilmour, Greiner, Hall, Hebb, Hick, Hodder, Holt, Jackson, Jones, Keall, Kühn, Merson, Nelmes, O'Halloran, Parish, Phillips, Philp, Picken, Pickworth, Robinson, Sankey, Stewart, Stiles, Suttie, White, Wyatt.

Pharmaceutical Journal

SATURDAY, APRIL 19, 1902.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

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Assistants Wanted

Prepaid Advertisements under this heading are charged as follows :—Fifty words or less, 3s. 6d. ; each additional ten words, or less, 6d. ; two initials or two figures counting as one word.

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QUALIFIED ASSISTANT required for good-class Dispensing and Retail.—Apply, stating usual particulars, to MAITLAND, 8, Torrington Place, W.C.

ASSISTANT required, whole or part-time, with good knowledge of Dispensing.—Apply, stating usual particulars, to ROUTLEY & Co., Beckenham.

WANTED, as soon as possible, Qualified ASSISTANT of first-class capabilities ; salary £3 per week ; outdoor.—Send photo to MARCHANT, Chemist, Eastbourne.

QUALIFIED ASSISTANT, by May 1st ; accustomed to Dispensing ; about 23.—Apply, personally between 11 and 6, or by letter, to BRADLEY & BOURDAS, 48, Belgrave Rd., S.W.

MESSRS. TIMOTHY WHITE COMPANY, Chemists, Portsmouth, have a vacancy for a trustworthy young qualified ASSISTANT ; early prospect of management ; a JUNIOR also required.

WANTED, JUNIOR ASSISTANT for a good-class suburban Dispensing and Photographic business ; indoors ; easy hours.—CLIFFORD MOORE, Woodside Park Pharmacy, North Finchley, N.

WANTED, with Minor qualification, ASSISTANT (Lady or Gentleman), for light Retail, Dispensing and Photographic business ; indoors.—ERIC LEMMON, Pharmacist, 47, High St., Exeter.

LONDON (Suburb), S.W.—Junior ASSISTANT (indoor) ; must have had good Dispensing and Retail experience in high-class business ; hours easy.—Apply, W., c/o Mr. Piper, 12, Bessborough St., S.W.

Assistants Wanted—Continued

BIRMINGHAM.—Wanted, experienced ASSISTANT (indoors), for Dispensing and Prescribing business.—Apply, with usual particulars, to SNAPE & SON, Chemists, 13, Gt. Hampton St., Birmingham.

MALVERN.—Qualified ASSISTANT (indoors), accustomed to best class Retail and Dispensing.—Please state full particulars, references, salary required, etc., to A. MANDER, Belle Vue Pharmacy, Malvern.

ASSISTANT wanted, with experience in select Dispensing establishment, and qualified ; two kept.—Apply, stating experience, salary required (indoors), &c., WHISTON & Co., Chemists, St. James's Sq., Bath.

AN ASSISTANT required for Dispensing ; must be quick and accurate.—Apply personally if possible ; if by letter, give all particulars, and state salary required, to J. G. SHIRLEY AND SON, 2, Westbourne Grove, Bayswater, W.

WANTED, a qualified man (must have passed the Minor Examination of the Pharmaceutical Society) as DISPENSER'S ASSISTANT; salary £75 per annum, with dinner.—Apply to HOUSE GOVERNOR, General Hospital, Wolverhampton.

AT ONCE.—Junior ASSISTANT ; indoors ; not under 22 ; one accustomed to good-class business, and a knowledge of Photography preferred.—Apply, stating age, references, and salary required, to DUNKLEY & ROGERS, Chemists, Tunbridge Wells.

BIRMINGHAM.—JUNIOR or IMPROVER wanted for light Retail suburban business ; outdoors.—Apply, with full particulars, stating age, height, salary required, and enclose references and photo, to FERRUM, Pharm. Journal Office, 8, Serle St., W.C.

LONDON, S.W.—A qualified ASSISTANT of good address and appearance, having good knowledge of front counter and Dispensing ; age not under 25 ; to board in, but sleep out.—Apply, with full particulars, to CHARLES WHITE, Pharm. Chemist, 45, Buckingham Palace Road.

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Assistants Wanted—Continued

SCARBOROUGH. — Outdoor ASSISTANT wanted about middle of May; must be of good address and well experienced in first-class trade; if qualified and with some knowledge of Photography preferred.—Give full particulars, with salary required and enclosing photo, to WHITFIELD & SON, Chemists to the King, Scarborough.

CAPE COLONY.—Wanted, qualified ASSISTANT, of good experience and having undeniable references; aged about 23; salary, 1st year, £12 per month; 2nd year, £13 per month; 3rd year, £14 per month; sleeping accommodation provided; second-class passage paid out; 3 years' agreement.—Apply, COLONY, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

A LARGE FIRM, manufacturing Pharmaceutical Preparations, are open to entertain applications from able young PHARMACISTS, with a good knowledge of Therapeutics, to fill vacancies on their travelling representative staff in India, the Colonies, the Continent, and Home Districts.—Give fullest particulars as to age, experience, salary, &c., to I. C. H. D., c/o Mather and Crowther, Ltd., New Bridge St., E.C.

CHINA.—Wanted, an ASSISTANT who has been accustomed to first-class Retail and Dispensing business; qualification by examination desirable but not essential; four years' agreement; passage paid out and home; salary, £14 to £16 per month according to qualification, and rising to £17 to £19 per month; free quarters.—Address, CHINA, 64, Crutched Friars, E.C.

INDIA (N.W. Province).—Wanted, a good ASSISTANT, well up in all branches of a Chemist's business; Minor qualification. Salary, 1st year 200 rupees per month, 2nd year 225 rupees per month, 3rd year 250 rupees per month; free furnished apartments; second-class passage paid out; required to start early in April; candidates must hold undeniable references.—Address, INDIA, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CALCUTTA.—Wanted at once, a qualified ASSISTANT; age about 24 years; must be able to conduct analysis; first-class opening for a competent man. Salary, 1st year, 275 Rs. per month; 2nd year, 300 Rs. per month; 3rd year, 325 Rs. per month, and 4th year, 350 Rs. To a candidate of exceptional experience the salary will be increased. 4 years' agreement. Second class passage paid both ways.—Apply by letter to CALCUTTA, c/o Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CAPE COLONY.—Wanted, good ASSISTANT, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £150; second year, £160; third year, £170; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, CAPE, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

SANITARY INSPECTORSHIPS.—Salaries £100 to £250. Numerous vacancies. Permanent appointments. Chemists or Assistants desiring change of occupation should qualify as Sanitary Inspectors. Special Postal Course of Lessons now commencing for London, Liverpool, Leeds, Cardiff, Manchester, Leicester, Newcastle-on-Tyne and Belfast exams. Anyone of average ability can pass. Had over 250 successful candidates, and fully half had no previous knowledge of sanitary matters.—Apply, ROBERT H. MUSHENS, Sanitary Science Teacher, Sunderland.

STRAITS SETTLEMENTS.—Good opportunity for qualified ASSISTANT; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to STRAITS SETTLEMENTS, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM; qualified; abstainer.—E. KEMP, 11, Cheapside, St. Leonards-on-Sea.

LOCUM TENENS; M.P.S. — CHARLESWORTH, Ardilaun, Frizinghall, Yorks.

LOCUM; qualified; 30.—APPLEYARD, 3, Oxford Gardens, North Kensington.

LOCUM, M.P.S.; town or country; disengaged.—W. SMITH, 12, Westfield Rd., Surbiton.

SENIOR; temporary or otherwise; disengaged; height, 5 ft. 10½ in.—MINOR, 160, King's Rd., Chelsea.

TEMPORARY; 31; qualified; experienced; disengaged 28th.—CHEMIST, c/o Mr. Wade, Chemist, Sidcup.

MINOR STUDENT requires part-time Dispensing (London).—317, Christchurch Rd., Boscombe, Bournemouth.

TEMPORARY engagements wanted; qualified; 39; married; disengaged.—CHEMIST, 3, Duncan Rd., Richmond.

QUALIFIED; 27; experienced Dispensing, Photography; outdoors preferred.—WILKINSON, 28, Finsbury Rd., Leeds.

MANAGER, SENIOR, temporary or otherwise; qualified; nearly 14 years in last situation. — PHARMACIST, 107A, Aslett St., S.W.

LOCUM TENENS (disengaged); reliable; experienced (Prescriber, Extractor, Photographic).—M.P.S., Pharm. Journal Office, 8, Serle St., W.C.

LADY DISPENSER (Apothecaries' Hall certificate) and BOOKKEEPER, desires re-engagement; Doctor or Institute; good references.—COSTELLO, Milborne Port, Sherborne.

ASSISTANT; 24; permanency; outdoors; short hours; good Prescriber; London experience; no heavy trade; salary required, £78; disengaged.—All particulars to KETONE, 16, Westfield Terrace, Wakefield.

LOCUM, BRANCH MANAGER or SENIOR; qualified; 37; store experience and West-end; Extractor, Prescriber and knowledge of Photography; excellent references; disengaged.—STATIM, 140, Kennington Park Rd.

EMERGENCY.—LOCUM TENENS; mixed business; qualified; abstainer; Extractor, Prescriber; excellent recent testimonials; twenty years' experience; usual terms; disengaged.—BREWERTON, 133, Liverpool Rd., Birkdale, Southport

A YOUNG Man, Pharmacien by examination, with slight knowledge of the English language and thorough knowledge of both French and German, desires a situation on the 1st of July as ASSISTANT in a first-class Pharmacy.—Address, Mr. MONNIN, Notaire, Moutier, Switzerland. H 30775.

MANAGER or SENIOR ASSISTANT. — A Pharmaceutical Chemist of experience (married, abstainer) desires an appointment of a permanent character as such, in a health resort (Tunbridge Wells or South Coast); outdoor; highest references given.—Address, with particulars, APENTA, Pharm. Journal Office, 8, Serle St., W.C.

ADVERTISER, Pharmaceutical Chemist, for four years general manager of a large business abroad, having returned to England, is desirous of obtaining a similar position in London or Provinces, preferably in wholesale trade, or would consider any proposal as to partnership or succession in a business; exceptional qualifications and extensive experience in business management and organisation.—Address, in confidence, to F. C. S., c/o Pharm. Journal Office, 8, Serle St., W.C.

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"Sale and Exchange" will be found on Page 18.

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows:—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

FOR immediate Sale, a well-established Retail Business in a North London district; returns about £700. This is a good opportunity for a pushing man.—Apply to Willows, Francis, Butler & Thompson, 40, Aldersgate St., E.C.

IPSWICH.—For Disposal, Chemist's Business, goodwill, stock-in-trade, shop fittings, and unexpired lease of dwelling house and business premises for 12 years at £35 per annum.—For further particulars, apply to Messrs. Robt. Bond & Sons, Auctioneers, Ipswich, Suffolk.

SHEFFIELD.—Drug Business with Gilbey's Agency and Off Beer Licence; grand corner Shop; exceptionally good house with side and back entrance; stable; average returns for the last 5 years, £976; price about £400; low rent; fullest investigation offered.—Apply to R. Colton, 244, Bramall Lane, Sheffield.

LONDON, S.W.—Chemist's Business; commanding Shop; 7 rooms; main road; ceaseless traffic; established 1830; annual returns over £600, proof; rent £80, on long lease; proprietor retiring; every investigation allowed and introduction given; price £575, including large stock.—Williamson & Co., Chemist's Business Valuers, 38, High St., Peckham. Telephone, 484 Hop.

MARKET TOWN.—First-class Retail, with agricultural and photographic connection; rent £32; taxes low; electric light throughout, with own gas engine and dynamo; returns, £1,300, showing £300 profit; laboratory for water and other analyses, very well fitted; presents splendid opportunity for securing a *bona-fide* business; proprietor retiring upon account of ill-health.—Catechu, c/o Evans, Sons & Co., 56, Hanover St., Liverpool.

Business Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

WANTED, a good-class Retail and Dispensing Business, with good dwelling-house, in country market town, in Midlands preferred; capital, £1,000.—Write particulars, rent, profits, &c., to Cortex, c/o Southall Bros. & Barclay, Birmingham.

Re DANIEL GUY Deceased.

NOTICE IS HEREBY GIVEN pursuant to the Act of Parliament 22 and 23 Victoria Chapter 35 that all persons having any claims or demands against the estate of Daniel Guy formerly of Grays Essex but late of Bexhill-on-Sea Sussex Chemist and Druggist deceased (who died on the 6th day of November 1901 and administration of whose estate and effects was granted to Eliza Guy the Widow and Relict of the deceased on the 9th day of January 1902 by the Principal Registry of the Probate Division of His Majesty's High Court of Justice) are hereby required to send in the particulars of their debts or claims to us the undersigned as Solicitors for the said Eliza Guy on or before the 19th day of May 1902 AND NOTICE IS HEREBY GIVEN that after that day the said Eliza Guy will proceed to distribute the assets of the said deceased amongst the persons entitled thereto having regard only to the claims of which she shall then have had notice and will not be liable for the assets or any part thereof so distributed to any person of whose debt or claim she shall not then have had notice.

DATED this 12th day of April 1902.

Halten and Asplin.
53 High St., Grays,
Solicitors for the said Eliza Guy.

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MESSRS. ORRIDGE & CO., Chemists' Transfer Agents, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

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VENDORS have the advantage of Messrs. O. & Co.'s direct attention and advice as to value without any additional fees.

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VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

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to make Up-to-date Improvements, Alterations, &c., would do well to consult

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CHEAP HOUSE for Window Enclosures, Drug Fixtures, Wall Cases, Dispensing Screens, Glass Facias, Stall Plates, &c. **Chemists fitted complete. Estimates Free.**

Shop Fittings for Sale

DISPENSING SCREEN, mahogany, 6ft. long, very handsome design; top and bottom portions complete; bevelled centre mirror, marble slab, sponge cage, side cases, counter shelves, drawers, etc. Top side cases lined with silvered plate and fitted with rounded edge glass shelves; £16 15s. net. Write us for prices of any chemists' fittings required.—Ayrton & Saunders, Chemists' Shop Fitters, 57, Parr St., Liverpool.

"Sale and Exchange" will be found on Page 18.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Platinum; disused utensils and scraps.—P. Rowsell, 9, Derwent Grove, Dulwich.

Set Stone's dispensing-scales, in good condition.—State price, Mortimer, Chemist, Aberdeen.

Wanted.—60 Camwal Ord., 15s. 9d.; 150 Camwal Pref., 17s. 9d.—M., 30, Tranquil Vale, Blackheath, S.E.

Fernie's "Herbal Simples," second edition.—Particulars and price to A. R., Pharm. Journal Office, 8, Serle St., W.C.

OFFERED.

Photographic Mounts. 2,500 cabinets, 25s.; 2,000 C.D.V.'s, 7s. 6d. to clear.—Edward Peck, East Dereham.

African Curios, Weapons, Skins, Photos Battlefields for cash; information about Employment, Shares, Mining, 2s. 6d. —James Frederick Janssen, Expert, Durban, Africa

Taylor's "Medicine," 4th Edition, 5s.; Walsham's "Surgery," 5th edition, 5s.; Bentley's "Botany," 5th edition, 5s.; all in good condition.—Harrison, 116, Abbeydale Rd., Sheffield.

Oil of Lemon, new season's, absolutely pure; 5 cwt. to be disposed of in lots to suit customers; 3s. 9d. per lb.; sample pound, post free, 3s. 9d. Essence Vanilla, 3 cwt., do., do.; sample pound, post free, 3s. 9d. — Address, Essence, 129, Hall Lane, Liverpool.

OFFERED—*Continued.*

Stephenson and Churchill's "Medical Botany," with 185 beautifully coloured plates; 4 vols. 8vo; gilt top; perfect unspotted copy; price 35s.—Homo, 8, Serle St., W.C.

Fish Knives and Forks.—Bargain; splendid walnut cabinet, beautifully fitted, containing 6 pairs best silver-plated fish knives and forks, hand-engraved blades and real ivory handles, quite new and perfect, Mappin's make, only 30s.; worth 52s.; approval before payment.—Mr. P. Ralph, Cambridge House, Lakenheath, Suffolk.

Croquet Set—For disposal, very cheap, splendid set of County Club Croquet, consisting of 4 superior boxwood mallets, with large heads, 4 boxwood balls, painted regulation colours, set of stout narrow hoops, clips, drill, etc., in nice case complete; unused and perfect; only £1 14s. 6d.; worth £2 15s.; approval before payment.—Mr. P. Ralph, Cambridge House, Lakenheath, Suffolk.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

☞ **For list of addresses where this Inset can be obtained, see opposite page.**

MISCELLANEOUS NEWS.

Copper in Peas.—At Rhyl Police Court on April 8, before Dr. Lloyd and other magistrates, Joseph Turner, grocer, Wellington Road, was fined 5s. and £2 costs for selling green preserved peas containing 7 10th of a grain of sulphate of copper per lb.—Inspector Pearson charged S. T. Smalley with a similar offence, and said that when he first asked to be supplied with a bottle of the peas Mrs. Smalley told him that they had not got any. He told her that he knew there were some in stock, and she served him with a bottle from behind the counter. —Mr. Gamlin, for the defence, submitted that Mr. Smalley had given instructions that the peas were not to be sold, and consequently he argued that they were not exposed for sale.—The Bench decided to give the defendant the benefit of the doubt, and dismissed the charge.

The Clergy as Dispensers of Pills.—A correspondent of the *British Medical Journal* has forwarded to the editor of that paper a circular addressed to a clergyman by a well-known firm of pill manufacturers. The circular says that as frequent inquiries for pills have been received from clergymen in rural districts, and as they believe the pills are mainly dispensed gratuitously amongst the poor, a list of the pills in most general demand for ordinary ailments is enclosed, together with their reduced prices. Then follows a price list containing such pills as "pil. aperiens," "Blaud pills," "pil. hydrarg., P.B.," "pil. hydrarg.," "little liver pills," "phosphori pur.," "pil. quininæ sulph.," and "pil. tussi," at prices varying from 10d. to 2s. 3d. per gross! Indications are given for the use of these pills. For example, so-called "pil. hydrarg." contains colchicum, aloes, and hyoscyamus, and is labelled "gout and rheumatics"; "pil. quininæ sulph." is labelled "neuralgic," and "pil. tussi" "cough." The composition of the last-named pill is not given, but it certainly does not seem wise to place in the hands of the clergy such drugs as mercury, phosphorus, and colchicum without warning. We trust few clergymen nowadays are in the habit of prescribing medicine to the poor without medical advice.

Royal Institution.—The first of a series of three lectures on "The Elements of the Oxygen Group" was delivered on April 10, by Professor Dewar, F.R.S. According to the *Standard*, the lecture, which was largely experimental, dealt with a great number of the various properties of the elements constituting the oxygen group, thus showing a justification for the modern systems of classification in the remarkable cases of gradation which occurred. Thus, the specific gravity, magnetic properties, colour, absorption spectra, and many other characteristics, all showed a distinct series in the order in which the elements occurred—viz., oxygen, sulphur, selenium, tellurium. In this connection an interesting experiment was performed, by which the magnetic property of oxygen was shown. Another resemblance exhibited by the several elements of the group was the striking change that took place in certain of their physical properties when subjected to varying conditions. Thus, sulphur under a gradual increase of heat changed in succession from a yellow solid to a reddish liquid, a thick black viscous substance, a pale thin liquid, and finally to vapour; while changes of a parallel character took place in the other elements. All these changes might be explained on the assumption of molecular rearrangement taking place. When an electric discharge was passed through oxygen, a diminution of volume took place, and this was explained as being due to the condensation of part of the oxygen to form ozone. The latter was a very remarkable and important substance, and had many properties which distinguished it from oxygen. Liquid ozone, for example, was exceedingly explosive, and, for this reason, could not be shown on the table. At the same time, its solution in liquid oxygen was quite harmless, and could be handled without danger.

ADVERTISEMENT INSET

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36, York Place, Edinburgh.

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London, E.C.

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Messrs. S. Maw, Son & Sons, Aldersgate St.
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Mr. W. Warren, 24, Russell St., Covent Garden.
City School of Pharmacy, 27, Chancery Lane.

W.

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Mr. W. F. Gulliver, 6, Lower Belgrave St.
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London College of Chemistry, 323, Clapham Rd.

N.W.

Mr. C. B. Allen, 20, High Rd., Kilburn.
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Mr. J. W. Taplin, 3, Imperial Pde., Cricklewood.
Mr. T. M. Taylor, 13, Queen's Ter., St. John's Wood.
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N.

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Mr. J. Holding, 169, Hemingford Rd.
Mr. J. T. Wallis, 78, Essex Rd.

E.

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Mr. C. E. Garman, 278, Roman Rd., Bow.
Mr. J. H. Gradidge, 393, Mile End Rd.
Mr. Snowden Kirk, 6, Chrisp St., Poplar.
Mr. J. H. Smith, 227, Commercial Rd.

S.E.

Messrs. Birch & Co., 59, Church Rd., Norwood.
Messrs. Wright, Layman & Umney, Ltd.
Mr. A. Pellew, 374, Old Kent Rd.
Mr. W. C. Sayers, 63, High St., Lewisham.
Mr. H. Wiggins, 236, Southwark Park Rd.
Metropolitan College, 160, Kennington Park Rd.
South London School, Kennington Rd.
Westminster College of Chemistry, Trinity Square.

Provinces.

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  Mr. C. Thompson, Sparkbrook.
  Mr. G. E. Perry, 171, Hagley Rd., Edgbaston.
  Messrs. F. Green & Co., Phœnix Mills, 393, Farm St.
  Mr. J. Austin, 395, Nechells Park Rd., Nechells.
  Messrs. Southall, 19-21, Lower Priory.
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BRIGHTON.—Mr. J. R. Gwatkin, 49, Grand Parade.

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GRIMSBY—Mr. H. W. Colley, 253, Cleethorpe Rd.
GT. YARMOUTH.—Mr W. S. Poll, 32, Regent Rd.
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HARTLEPOOL.—Mr. J. Horsley, 104, High St.
HASTINGS.—Messrs. J. Bell & Co., 22, Robertson St.
HEXHAM.—Messrs. Gibson & Son, 16 & 18, Fore St.
HEYWOOD.—Mr. F. Hazlitt, Market St.
HITCHIN.—Messrs. W. Ransom and Son.
HORNCASTLE.—Messrs. W. Kemp & Son.
HUDDERSFIELD.-Mr. R. C. Walshaw, 4, Market Pl.
HULL.—Mr. C. B. Bell, 6, Spring Bank.
  Mr. C. Hoyles, Holderness Road.
  Mr. A. Richardson, 443, Hessle Road.
IPSWICH.—Messrs. Wiggin & Son, 34, St. Matthew's.
JARROW-ON-TYNE, Mr. J. D. Rose, 18, Ormonde St.
KENDAL.—Messrs. Severs & Bateson.
KIDDERMINSTER.—Mr. M. Smith, 48, Oxford St.
LANCASTER.—Mr. J. Vince, 37, Cheapside.
LEEDS.—Mr. W. S. Baxter, Bramley.
  College of Pharmacy, 19, Springfield Place.
  Mr. F. C. Long, Headingly.
  Messrs. Reynolds & Branson, Ltd., 13, Briggate.
LEICESTER.—Mr. F. W. Goodess, Hotel St.
LINCOLN.—Mr. J. T. Birkbeck, 5, Bailgate.
LIVERPOOL.—Mr. A. Buck, 179, Bedford St.
  Mr. W. H. Clubb, 138, Smithdown Rd.
  Mr. C. W. Cooke, 323, Park Rd.
  Mr. J. W. Kelly, 16, County Road, Walton.
  School of Pharmacy, 6, Sandon Terrace.
  Messrs. Symes & Co. Ltd.
  Mr. F. Walker, Beacon Lane.
LYNN.—Mr. W. W. Crisp, 3, Saturday Market.
MAIDSTONE.—Mr. F. Corfe, 5, Gabriels Hill.
MANCHESTER.—Mr. J. H. Nidd, 714, Rochdale Rd.
  Mr. H. Kemp, 35, Wilbraham Rd., C/H.
  Mr. C. Swinn, Upper Moss Lane.
  Mr. G. L. Westmacott, 17, Market St.
  Mr. J. B. Williams, 42, Brook St.
  Messrs. Jas. Woolley, Sons & Co., Ld.
  Northern College, 100, Burlington St.
  Manchester College, 225A, Oxford St.
MANSFIELD.—Mr. D. J. Patterson, West Hill.
MORPETH.—Mr. J. Whittle, Bridge St.
NEWCASTLE-ON-TYNE.—School of Chemistry, 55, Northumberland St.
  Messrs. Proctor, Son & Clague, 11, Grey St.
NEWPORT (Mon.).—Mr. T. P. Garrett.
NORTHWICH.—Mr. G. Humphreys, High St.
NOTTINGHAM.—Mr. F. R. Sergeant.
  School of Pharmacy, 13, Victoria St.
NORTHAMPTON.—Mr. John Bingley.
NORWICH, Messrs. Fuller & Co., Rampant Horse St.
NUNEATON.—Mr. G. Iliffe, Market Place.
OLDHAM.—Mr. H. Bates, 38, George St.
OXFORD.—Mr. T. J. Burbank, 116, Walton St.
PETERBOROUGH.—Messrs. Sturton & Sons.
PLYMOUTH.—Messrs. Balkwill & Co.
  Mr. C. J. Park, Mutley Plain.
PORTSMOUTH.—Mr. T. Brewis, 325, Fratton Rd.

Provinces.—*Continued.*

PRESTON.—Mr. F. A. Williamson, Garstang Rd.
RAWTENSTALL.—Mr. J. E. Lord, Rossendale.
REDHILL.—Mr. W. H. Fowler, 2, Station St.
ROMFORD.—Mr. J. W. Lasham, High St.
ROTHERHAM.—Mr. J. Horsfield, 1, College St.
RYDE.—Mr. H. Pollard, 168, High St.
ST. HELENS, Mr. J. G. Wallbridge, 52, Liverpool Rd.
ST. LEONARD'S-ON-SEA.—Mr. C. R. Stedman.
SCARBOROUGH.—Mr. J. Whitfield, 113, Westboro.
SHEFFIELD.—Mr. H. Antcliffe, West Bar.
  Mr. P. Carr, 85, Ecclesall Rd.
  College of Pharmacy, 116A, The Moor.
  Mr. G. T. W. Newsholme, 27, High St.
  Mr. J. B. Pater, Broomhill.
  Mr. G. Squire, 19, Haymarket.
SHREWSBURY.—Mr. W. G. Cross, 70, Mardol.
SOUTHAMPTON.—Messrs. Randall & Son.
SOUTHPORT.—Mr. Jas. Righton, 293, Lord St.
STAFFORD.—Mr. J. Averill, 10, Market Square.
STOCKPORT.—Mr. W. B. Orton, 67, St. Petersgate.
STOCKTON-ON-TEES.—Messrs. Brayshay & Son.
STOKE-ON-TRENT.—Mr. F. Adams, High St.
SUNDERLAND.—Mr. C. Ranken, Stockton Road.
TODMORDEN.--Mr. H. P. Lovatt, 6, Water Street
TOTTENHAM.—Mr. A. E. Tanner, Tottenham Ter..
TUNBRIDGE WELLS.—Mr. A. E. Hobbs.
ULVERSTON.—Mr. R. Willan, 5, Market St.
WAKEFIELD.—Mr. J. H. Chaplin, 60, Westgate.
WALSALL.—Mr. E. M. Elliott, 42, Park St.
WARRINGTON.—Mr. H. N. Ashton, 63, Sankey St.
  Mr. J. Rymer Young, 40, Sankey St.
WESTON-SUPER-MARE.—Mr. John Cooper.
WIDNES.—Mr. C. J. Bennett, 32, Victoria Rd.
WIGAN.—Mr. J. Phillips, 58, Wallgate.
WINCHESTER.—Mr. A. E. Chaston, High St.
WINDSOR.—Mr. B. Westlake, 91, Peascod St.
WOLVERHAMPTON.—Mr. T. J. Gibson.
WOOLWICH.—Mr. A. J. Wing, 69, Powis St.
WORKINGTON.—Mr. J. R. Mason, 4, Pow St.

Wales.

ABERAVON.—Mr. G. B. Loveluck, High St.
BANGOR.—Mr. Owen Jones, Market Place.
FLINT.—Mr. O. William Jones, Apothecaries' Hall.
HOLYHEAD.—Mr. F. J. Jones, 12, Market Place.
MERTHYR.—Mr. E. W. Harris, 128, High St.
SWANSEA.—Mr. N. M. Grose, 8, Temple St.
WREXHAM.—Mr. C. G. Caldecott, Regent St.

Scotland.

ABERDEEN, Mr. John Cruickshank, 42, George St.
ARBROATH.—Mr. A. Naysmith, High St.
DUNDEE.—Mr. C. Kerr, 56, Nethergate.
EDINBURGH.—Mr. J. A. Forret, Brougham Place.
  Mr. C. F. Henry, 1, Brandon Terrace.
FALKIRK.—Mr. W. Forgie, 105, High St.
GLASGOW.—Mr. T. Dunlop, 181, Albert Road.
  Mr. J. A. Russell, 212, New City Rd.
  School of Pharmacy, 180, West Regent St.
  Mr. J. W. Sutherland, 127, Buchanan St.
GREENOCK.—Mr. A. McNaught, 4, W. Blackhall St.
HAWICK.—Mr. W. S. Turnbull, 2, Dovemount Pl.
KIRKCALDY.—Mr. David Storrar, 228, High St.
LEITH.—Mr. J. Bowman, 3, Duke St.
LINLITHGOW.—Mr. A. Spence, 135, High St.
MONTROSE.—Mr. A. Davidson, 172, High St.
PAISLEY.—Mr. A. Fraser, 100, High St.
PETERHEAD.—Mr. J. F. Tocher, 1, Chapel St.
STIRLING.—Mr. John Raffan, 16, Port St.

Ireland.

BELFAST.—Messrs. Grattan & Co., Ltd.
  Mr. J. B. Robinson, Duncairn Medical Hall.
  Mr. J. C. Payne, 13, Shaftesbury Sq.
CORK.—Mr. T. R. Lester, 106, St. Patrick St.
DALKEY.—Mr. G. D. Beggs, Medical Hall.
DUBLIN.—Apothecaries' Hall, 40, Mary St.
  Mr. J. I. Bernard, 26, Clare St.
LIMERICK.—Messrs. John Laird & Co.
LONDONDERRY.—Messrs. Maxwell, Greer & Co
WATERFORD.—Messrs. G. White & Sons.

NOTES IN PARLIAMENT.

Anti-Typhoid Inoculation.—Replying to Captain Norton, in the House of Commons on Monday, Lord Stanley stated that the report on the results of anti-typhoid inoculation in connection with the troops has been received. It deals with only 4,138 cases, and the aggregate results show a mortality of 8·2 per cent. in inoculated persons as against 15·1 per cent. uninoculated. The report, however, does not, from the point of view of the authorities, appear to be sufficiently conclusive in itself, and it seems expedient, said Lord Stanley, to obtain further statistics from the admission and discharge books before publishing it.

Calorific Values.—Mr. Arnold-Forster, answering Mr. Wm. Allan, on Monday, said that he could not ascertain that, as the question suggested, experiments had actually been made by the Admiralty with anthracite and Scotch coal in combination. Welsh smokeless coal had been tried on many occasions in combination with various qualities of bituminous coal, but the result had not been satisfactory. Experiments with anthracite were in contemplation, and he thought that trials might with advantage be made of the results obtainable with anthracite in combination with bituminous coal, including the Scotch coal.

Maximite.—Mr. Arnold-Forster, replying on Monday to Mr. O'Shee, stated that reports had been received by the Admiralty as to the results of experiments carried out in America with the new explosive called Maximite. They had been referred to the Explosives Committee, who are carrying on experiments with various high explosives. The results of such experiments are not made public.

The Budget.—On Monday, in the House of Commons, the Chancellor of the Exchequer made his Budget statement, postponed from the previous Thursday owing to indisposition. This is not the place to enter into the details of national finances. The essential facts to the struggling tradesman and the middle-class taxpayer are that a penny is added to the income-tax; that the stamp on cheques, dividend warrants, and "sight" bills, which has hitherto been a penny, will now be twopence, and there is to be a duty of 3d. per cwt. on imported corn and grain and 5d. per cwt. on imported flour and meal; and that there is to be an addition of £32,000,000 to Debt. All this is bad enough, but it is a relief to find that the prediction as to additional taxation on tea, cocoa, and other commodities have been falsified. The Chancellor of the Exchequer holds out the hope, and indeed may be said to definitely promise that when the war ends there will be a reduction of the income tax. Incidentally he stated that while there has been a decrease in the consumption of beer, the difference to the revenue has been made good by increased consumption of tea and cocoa.

The Sugar Tax.—An interesting feature of the Budget statement was the Chancellor's reference to the success of the sugar duty. He estimated for £5,100,000 and received £6,390,000. Forestalments in the clearances of sugar in anticipation of increased taxation partly account for the increase. Sir M. Hicks-Beach took occasion to point out that there was an exceptionally good harvest of beet sugar, and that that lowered the price of sugar to such an extent that, as far as wholesale purchasers of sugar are concerned, for several months past they have been paying for sugar duty only from 1s. 10d. to 2s. a cwt. more than in the previous year, although the duty, which they did not pay before, is 4s. 2d. a cwt. As to the retail purchaser, though the price to him was at first raised by a halfpenny in the pound, this has gone down in many places to a farthing, and in some cases there is no increase at all.

The Corn and Flour Duty.—On Tuesday an important question was put to the Chancellor of the Exchequer by Mr. Lough. The hon. member asked what goods are included under the heading of grains, and flour and meals, and whether it includes all cereals such as peas, haricots, lentils, rice, and also manufactured goods, such as macaroni, semolina, starch, tapioca, sago, arrowroot, etc. Sir M. Hicks-Beach replied in the affirmative.

Duty on "Patent" Medicines.—Mr. Layland-Barratt on Tuesday asked the Chancellor of the Exchequer whether, in cases where penalties under 42 George III., c. 59, for selling medicines without affixing the stamps in payment of duty required under that Act are not recovered by process of law, but are claimed by and paid direct to the Inland Revenue authorities, the informer is entitled to any portion of such penalties; and, if so, to what portion; and whether, if the informer is a Government official, he is entitled to a similar or any portion of the penalties. Sir M. Hicks-Beach replied that the Board of Inland Revenue are empowered to grant rewards to informers, whether Government officials or otherwise, in cases of the kind referred to. The amount awarded to the informer depends on the circumstances of each individual case.

A "Hardy Annual."—In the House of Lords on Monday last Lord Avebury introduced his Bill for the Early Closing of Shops. It was read a first time.

PERSONALITIES, BUSINESS CHANGES, ETC.

Messrs. Burroughs, Wellcome and Co. are opening an office in Cape Town.

Mr. W. Astor has given £20,000 to University College, London, to endow the professorial chairs which are at present unendowed.

Mr. Herbert J. Whitehead, M.P.S., has purchased the business lately carried on by Mr. James Walker, 72, Ledsam Street, Birmingham.

Mr. Robert Tocher, Ph.C., F.S.M.C., etc., has just acquired the business of the late Mr. James Dickie, at 491, Victoria Road, Glasgow.

Mr. Thomas Armstrong, M.P.S., of Dundee, has acquired the business carried on so long and successfully by Mr. Robert Tocher at 10, High Street, Maybole.

Mr. R. Tocher, F.S.M.C., etc., has opened consulting rooms at 69, Dalblain Road, Ayr, where he advises on all defects of vision and tests the eyesight.

Mr. John Holding, chemist and dentist, Divisional Secretary for West Islington, has been reappointed Vicar's Churchwarden for St. Andrew's Church, Thornhill Square, N., for the seventh time.

Mr. Charles Metcalfe Snow, M.P.S., has opened a pharmacy at 2, Hope Street, Filey, where he will carry on the business of an English and foreign dispensing chemist and practical optician.

Alderman Frederick Mason, chemist and druggist, Rotherham, has resigned his connection with the Rotherham Town Council, on account of ill-health. He was Mayor in 1898, and for a number of years Chairman of the Health Department.

Mr. J. T. Birkbeck, chemist, Bailgate, Lincoln, has been having excavations made for a cellar beneath his premises, and last week the workmen struck some massive stones which proved to be the roof of an ancient subway. The task of excavation has proved one of abnormal difficulty, for it had to be commenced from the street, and the workmen came upon the old city wall, standing here 4 ft. high and consisting mainly of great stones weighing approximately some 15 cwt. each Further backward beneath the existing premises they came, as already stated, upon the stones roofing the subterranean passage. The height of the passage is 4 ft. 6 in., and the width is 2 ft. 6 in., while the overhead stones weigh probably near a ton each. Each is 4 ft. wide and 18 in. thick. Measurement has proved that the top of the arch lies 7 ft. 6 in. beneath the roadway, and numerous other estimates go to show that the Lincoln of to-day is some 7 ft. above the first city, Lindum Colonia.

PHARMACEUTICAL SOCIETY.

OFFICIAL NOTICES.

ANNUAL SUBSCRIPTIONS.

All Annual Subscriptions are now due.

Subscription payable by Members	One Guinea
Subscription payable by Student-Associates ..	Half-a-Guinea
Life Subscription (Members)	Ten Guineas

Subscriptions should be remitted by Post-Office Order, Postal Orders, or Cheque, direct to the Secretary, 17, Bloomsbury Square, or may be paid at the Offices in London or in Edinburgh.

Cheques should be drawn in favour of RICHARD BREMRIDGE, or Bearer, and crossed "London and Westminster Bank," and Post Office Orders and Postal Orders should be made payable at the Western Central District Post Office.

THE ANNUAL DINNER

OF THE MEMBERS OF

THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN

AND THEIR FRIENDS

Will be held on Tuesday, May 27, 1902, at the Whitehall Rooms, Hôtel Métropole, at 7 o'clock.

Tickets, One Guinea each (including wine), can only be obtained from the Honorary Secretary to the Dinner Committee, 17, Bloomsbury Square, W.C.

A full list of Stewards will be published shortly.

EVENING MEETING IN EDINBURGH.

An Evening Meeting of the Society will be held in the Society's House, 36, York Place, Edinburgh, on Wednesday, April 23, at 8.30, Mr. Peter Boa in the chair.

Proceedings.

1. The Turpentine Test for Glacial Acetic Acid. By Thomas Dunlop.

2. The Titration of Boric Acid and Borax. By Thomas S. Barrie, F.C.S.

3. Some Methods of Dispensing. By William S. Glass.

AUSTRALASIAN NEWS.

The New Commonwealth Tariff continues to afford ample matter for discussion in the Federal Legislature, but up to the present no items of importance to pharmacy have been dealt with further than those already advised. When they do come on for consideration the Victorian representatives of the craft—as being more particularly on the spot—may be relied on to do their utmost to look after its interests.

The Pharmacy Board of New South Wales, at the January meeting, received an application from the wife of a pharmacist, whose affidavit that she had been an assistant for three years was certified to by two medical practitioners. One of the members of the Board, Mr. Marshall, while admitting that the lady had a claim under the Act, contended that the law gave the Board power, when any doubt was entertained, to examine persons in reference to their application and the evidence submitted, and the following motion proposed by him was eventually carried, viz.:—"That in view of the facts of this application, and that the Board had found in the majority of similar applications that the applicants had not had the actual training and knowledge necessary, it was considered, before granting the application, that the lady should appear before the Board; and that the medical men who had supported the application should also be summoned."

It Will be Seen from the foregoing that the New South Wales Board is strong in the belief that they have the right to inquire in a case of this kind as to the qualification of the applicant from a technical, apart from a legal, point of view. Should this turn out to be the case, the Board will be very much more fortunate than that of Victoria in the Dimmock case a few years ago. Dimmock applied for registration in Victoria on the ground of service as an assistant prior to 1876, but probably being aware of the fact that at the date of his alleged service the applicant was only about sixteen years of age, the Board proceeded to submit him to a technical examination. His application being refused, Dimmock obtained a mandamus on the grounds that the Board had exceeded its powers, and upon appeals to the Full Court it was authoritatively pronounced that the Board's function was limited to deciding upon the evidence before it as to whether the applicant had made good his statement at the time prescribed. On rehearing by the Board, Dimmock's application was again refused, but this time on the more legal ground that the applicant's evidence as to service was unsatisfactory. The *Australasian Journal of Pharmacy* points out that unless the New South Wales Board are desirous of paying for its own experience, that of the Victorian Board, the expenses in connection with which were not a trifle, should give them pause. The issue is awaited with considerable interest.

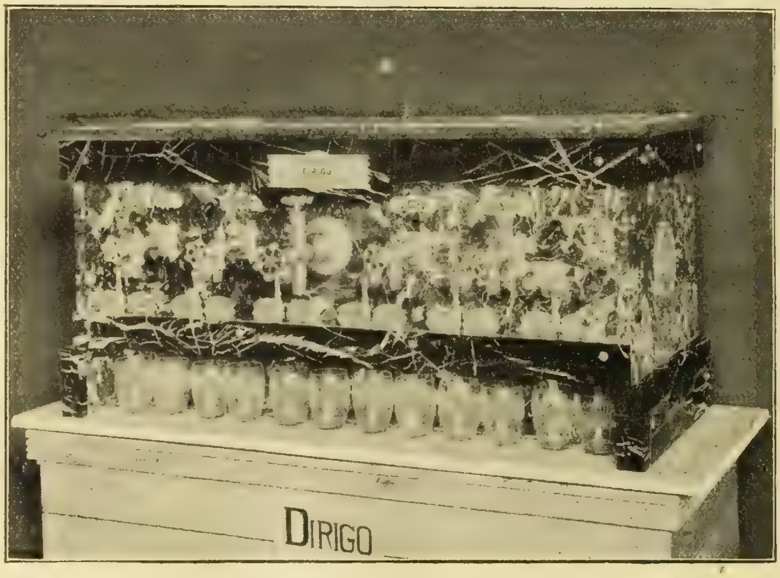
In a Recent Letter mention was made of the fact that the women folk were gradually edging their way into Victorian pharmacy. A striking illustration of this is afforded by the fact that at the January meeting of the Council of the Pharmaceutical Society of Australasia no less than three ladies were elected members. The Secretary, Mr. Shillinglaw, states that this is the first instance during a period of forty-five years that ladies have been applicants for membership of the Society, and if member, why not President? And if President, what necessity for a Council? Who would dare to oppose the dicta of the Presidentess?

The Pharmacy Board of New South Wales has at last been granted a subsidy of £400 for the financial year 1901-1902, and in the ordinary course of things this may be presumed to be a permanent allowance. The Board wanted assistance very badly. Starting on January 1, 1901, with over £200 funds in hand, it had only about £50 left at the end of the year, and most of that was actually due to deferred creditors. The necessity for the grant becomes apparent when it is noted from the balance sheet that while the income from registration and examination fees, etc., did not exceed £170, the following salaries had to be provided for, apart from other expenses:—Registrar, £150; inspector, £54; housekeeper, £25. With its increased income the Board is expected to do a lot more for pharmaceutical education in the State than it has so far been able to undertake.

SODA FOUNTAINS FOR CHEMISTS.

The soda fountain is essentially an American institution, but the experience of chemists and druggists who have introduced such an apparatus on this side of the Atlantic seems to have been sufficiently satisfactory in many cases to encourage others to follow their example. The proprietors of one London pharmacy, who have had an American soda fountain for three seasons, state that they have so far found it a success, a fact they attribute to their drawing a good wholesome drink, and they think it is only a question of time when the drinks will be as popular in this country as in America, the greatest drawback being the short summer. They have not found it interfere with their ordinary business, except that it entails a considerable amount of very hard work, a fact which must not be forgotten by intending purchasers of soda fountains.

The object of the soda fountain, it should scarcely be necessary to explain, is to facilitate the supply, on draught, of aërated water, flavoured in accordance with the customers' desires. In America the "dispensing of soda," as it is termed, has been elevated to the position of a fine art, and "clerks" are employed in many drug stores for the sole purpose of mixing aërated beverages. This, it may be urged, is not pharmacy, but no more is nine-tenths of the other business transacted by most chemists and druggists nowadays. Moreover, apart from that point, many chemists and druggists have already, as previously stated, installed soda fountains with satisfactory results, and others are making inquiries on the subject. Inasmuch, therefore, as information of a strictly legitimate character is required, it becomes a duty to supply that information as far as possible.



With that object in view, a useful work—'The Spatula Soda Water Guide'—has been compiled by Mr. E. F. White, an American "soda expert," and published by the Spatula Publishing Company, of Boston, Mass., U.S.A., at the price of one dollar. The author opens with advice on the choice of a fountain, and classifies his remarks on that subject under the following heads:—(1) Cold Soda; (2) Cleanliness; (3) Drainage; (4) Convenience; (5) Good Syrup Tanks; (6) Mechanical Construction; (7) Durability; (8) Neatness; (9) Price; (10) Appearance.

Cold Soda can only be obtained at will by the use of a refrigerator, and a most important point in hot weather is to be able to dispense the aerated beverages as cold as possible. Further, it is desirable that the cooling should be effected as economically as possible. The ice-box which constitutes the refrigerator should, therefore, be constructed on scientific principles, the coils of pipes through which the water passes being arranged so that the water from the melting ice can come in contact with every part of their surface, while the packing of the box should suffice to "keep in the cold."

Cleanliness requires that the pipes in the fountain shall be so arranged as to facilitate easy and thorough flushing at frequent intervals. Otherwise there will be a tendency for the slime which forms where water or ice stands to collect in the pipes.

Drainage is important for the same reason, small drain pipes being objectionable because of the tendency of the slime to fill them. Preference should, therefore, be given to a fountain with a drain of sufficient size to allow the melted ice to flow away rapidly.

Convenience is a point which involves general consideration of the arrangements of the fountain, the accessibility of the various parts being a matter of considerable importance.

Good Syrup Tanks are obviously essential. If made of glass or porcelain they are easily kept clean, and if fitted with airtight covers, they will keep the contained syrups fresh for a much longer period than would otherwise be the case. The tanks should be easy of access, and yet situated so as to receive a certain amount of cold from the ice-box without being in it, while air which has been in contact with the ice or water therefrom should not be permitted to taint the syrups, as it is likely to do, more especially when natural ice is used.

Mechanical Construction is a very important point for consideration. The metal lining of the fountain should consist of block tin, the syrup taps should work easily without leaking, and the draught arm should be well made and of a durable pattern.

Durability must depend largely upon price, but, if the general construction of the fountain be faulty, the apparatus will be dear at any price. As a rule it will be found that the presence of a properly-constructed ice-box implies a well-made fountain, but every place where a flaw is likely to occur should be carefully examined.

Neatness can be preserved more readily if the fountain be as plain as possible. Excess of ornamentation should, therefore, be avoided, otherwise too much time will be occupied in keeping the apparatus clean and tidy.

Price must depend upon means and requirements. If the available capital be limited, it is wiser to buy a small, good fountain, properly equipped with appliances, than a large one without the necessary equipment to dispense beverages in a thoroughly satisfactory manner. A ten or twelve-syrup fountain, with an automatic carbonator, can be obtained for a moderate outlay, and a fair business can be conducted with such an outfit. Extra syrups, especially those in less common use, can be kept ready in suitable bottles, from which they can be quite as readily dispensed as those in the tanks, unless the dispenser is very busy indeed.

Appearance counts for much in a soda fountain, but naturally depends largely upon the price of the apparatus. A marble fountain costs much less than one made of onyx, and will be found equally satisfactory in use.

SODA FOUNTAINS ON THE MARKET.

Particulars are here appended of firms supplying soda fountains and the various accessories, and it may be suggested that intending purchasers should place themselves in communication with those firms, who doubtless will be pleased to furnish any additional information that may be required.

The American Soda Fountain Company, of New York, with branches in several other large cities of the United States, is represented in this country by Messrs. Stiles, Limited, whose offices and showrooms are at 72-74, Gray's Inn Road, London. This company has very strong claims on the attention of intending purchasers; it has control in the British Isles of a very considerable share of the output of the machines made; it represents firms who have been successfully engaged in the business for half a century in a country and under a system and methods which have been perfected and developed until the undertaking has become one of the great commercial successes of the day. The fountains manufactured by this company are made with marble bodies in various colours, including the very showy and almost transparent Mexican onyx, and are fashioned in the most attractive designs. The illustration on the previous page depicts the Dirigo Fountain. The exterior is of Sienna marble. It is fitted with twelve syrup jars, one double-stream soda-water draught arm and four taps for minerals. It measures 4ft. 3in. long, 1ft. 10in. wide, with double serving space. The syrup system is an automatic arrangement that dispenses a uniform quantity direct from glass jar into the glass tumbler without coming in contact with any form of metal whatever; the interior of the marble structure contains successful patented devices for cooling both the aërated water and the syrups to a degree that causes them to flow from the fountain in such cool condition that they are sparkling, pungent, and bright to an extent that will at once commend them to the palate of the connoisseur. In order to develop their business Messrs. Stiles have taken extensive premises, which they have fitted with a modern plant with latest devices for manufacturing syrups direct from fruit with the most approved methods now adopted in the States. These syrups compare favourably in price with those made from synthetic products. One feature of the business is that not only are the beverages appreciated by the public, but the cost of them when prepared with the finest quality of ingredients procurable, and when properly dispensed, is so small that the profit is practically 75 per cent. of the receipts. In addition to these direct profits is the advantage of drawing customers to the establishment. In the United States the soda fountain is considered an unrivalled attraction for other business. The apparatus itself, if judiciously selected and placed, constitutes an ornament to any establishment, however elaborately fitted. Messrs. Stiles undertake to pay all freights, guarantee safe delivery, and set up apparatus for their patrons by experienced machinists, after which they give full and explicit instructions by an expert operator as to the best methods of conducting the venture. They also supply a large amount of signs, catchy advertising matter, etc.; in fact, they are trying to instil into the business the necessary elements to produce a thorough success. Messrs. Stiles have large showrooms at 72-74, Gray's Inn Road, where they intend to have upon exhibition from £5,000 to £10,000 worth of up-to-date apparatus at all times, and in addition to this they will have a very large and elaborate apparatus at the American Exhibition, Crystal Palace, during the coming summer, thus affording visitors to this popular place of amusement the opportunity of testing the beverages exactly as they should be dispensed.

The soda-water apparatus manufactured by Messrs. Robert M. Green and Sons, of Philadelphia, are supplied in this country by Mr. A. E. Bolshaw, of White Rock, Hastings. This firm has been engaged since 1874 in the manufacture of soda water, and their apparatus is the outcome of their own long experience in the trade. They claim for their Patent Polar System and Cyclone Coolers simplicity, easy working, coldness of beverages and economy in the use of ice, and draw special attention to their aluminium syrup faucets with which their various apparatus are equipped, combined with their stone china syrup tanks. Of their small fountains "The Reaper" is the most popular. It is made of coloured marble, decorated with gold leaf. It has a double steam draught tube and porcelain syrup plates, the syrup cans and coolers are so constructed as to prevent any possibility of metallic contamination. The price for complete outfit for six syrups is £40 7s., and the dimensions are as follows:—Length, 20 in.; width, 14 in.; height, 26 in. More elaborate and expensive machines are "The Gem," price £70 17s., and "The Kent," price £105. Mr. A. E. Bolshaw, chemist, of Hastings, the British agent for the sale of Messrs. Green's apparatus, has been very successful with his fountain during the past three seasons, and we print in another column his account of the experiment.

Messrs. Farrow and Jackson, of 16, Great Tower Street, and 8, Haymarket, London, have forwarded an advance copy of their catalogue of counter fountains, aërating plant, etc. These are made at their own factory, which has lately been enlarged to meet the requirements of this increasing trade. Their new showrooms adjoin the factory in Mansell Street, E., and intending purchasers are invited to make an inspection of the various styles. The catalogue furnishes particulars of fountains ranging in price from £3 to £90. Messrs. Farrow and Jackson have introduced several improvements, their newer fountains are fitted with their patent "challenge" tap, which tends to prevent loss of gas and to preserve the sparkling condition of the water. Their syrup taps are constructed either of aluminium or of a special metal with a lining of ebonite which prevents the syrup from coming into contact with metal. The fixing of machines is undertaken in any part of the country by experienced men, and, when necessary, instruction will be given in working the apparatus.

Messrs. Idris and Co., Limited, of Pratt Street, Camden Town, London, have been manufacturers of soda fountains for some years past—in fact, ever since they purchased the well-known business and plant of the late firm of Dows, Clarke and Co., of Soho. Messrs. Idris, as most of our readers know, manufacture syphons on a very large scale—probably they are the largest makers in this country—and with their extensive plant they have complete facilities for turning out the various fittings and requisites necessary to the construction of the soda fountain. Where space is restricted, which is so often the case in many chemists' shops, especially in those situated in busy thoroughfares, Messrs. Idris are able to construct the machine in the shape and to the size necessary to fit the available accommodation, an advantage which will be apparent to many who contemplate embarking in the business. At the present time a soda fountain is in course of construction for a well-known chemist's shop in the City of London where the manufacturer's ability to adjust the machine to fit into very circumscribed space has been of the utmost use to all concerned. Prices of the fountains range from £15 upwards; a medium-priced machine costs about £50. They are fitted with double valve draught (central) arms; one tap can be utilised for plain water when it is desired to dispense ordinary saline draughts. The removable tops of the ice-box are made of wood, and are therefore light and easily handled. The syrup jars are so placed that they can readily be withdrawn, either for refilling or for cleansing. This firm supplies the aërated water in cylinders and all accessories. Their carefully-prepared fruit juices and syrups, comprising between thirty and forty varieties, are made on their own premises from selected fruit under the supervision of their qualified chemist.

A RETAIL CHEMIST'S EXPERIENCE.

Mr. A. E. Bolshaw, of White Rock, Hastings, writes as follows:—"I have pleasure in giving my experience as a chemist in connection with the supply of American iced fruit beverages. For some considerable time before investing in a soda fountain I questioned what effect the introduction of these beverages would have on my dispensing business, and whether I should not run a risk of losing the connection I had then formed and lower myself as a chemist in the estimation of the public. All such fears have now gone with three years' experience in running a fountain. I fully comprehend I am in business to make a living, and to use my knowledge to the best advantage, and it is far more satisfactory to me to sell these iced beverages than to waste time in handing patent medicines to customers at a loss, after carriage, rent, and time are allowed for. It is a question just now as to which class of business is to run soda fountains. Judging from sales of fountains I have brought about, the drinks will be obtained from chemists, grocers, restaurateurs, drapers, caterers, and confectioners, and the proportion sold to chemists is about one in eight. According to my experience, a chemist has advantages over others, whatever their business may be, owing to his ability to supply good syrups through having the knowledge as to what essences and flavours should be like. Furthermore, the chemist should have the best conception as to the public taste. The soda fountain business is by no means a negligible quantity at the present day. When one compares the capital invested in soda water appliances with ten or fifteen years ago it must be admitted that it is progressive; and, again, when it was an acknowledged fact that the soda fountain was a failure in England up to three years ago, to-day there are some 400 machines in the country giving satisfaction. Will the chemist still be satisfied with selling syphons only, when he can obtain as much profit out of a single glass of soda as he would get by selling a single syphon, and having to pay a boy to take it to customer's address and to call again for empty syphon? Many chemists have a gold mine as regards their stand for a soda fountain. Are they willing to wait until agents call and induce them to invest £40 or so that will bring in at least 50 per cent.? If they have not ready cash to pay down, let them ascertain what can be done by allowing part payment to remain until the end of season. The beverages can easily be disposed of if offered for sale. Can chemists afford to allow good business to go into other channels while ordinary business is slipping away? What is there more suitable to make good this loss than a soda fountain, which will add to the appearance of the pharmacy and will bring a large volume of new business?"

PHOTOGRAPHIC AND OPTICAL TRADES EXHIBITION.

During the past week the third annual exhibition has been held at the Portman Rooms, Baker Street—familiar to those of our readers who attend the Chemists' Ball—and as it remains open till Saturday evening, the 19th inst., there is just time for many who have not yet paid a visit there to put in an appearance before the exhibition closes. Many leading firms are represented, and amongst them we noticed the following:—

Messrs. G. Houghton and Son had a large and varied display comprising their "Sanderson" and other cameras, tripod stands and various novelties.

Mr. J. E. Lockyer, of Deptford, was in evidence with packed chemicals for the trade, concentrated developers and solutions, etc., and exhibited his improved automatic enlarging and copying apparatus.

Messrs. A. and M. Zimmermann's stand was monopolised by Messrs. Schering's cartridge developers and photographic chemicals.

The "Wizard" cameras in thirty different styles, with other apparatus, were to be seen at Messrs. Seabrook's stand.

Messrs. A. E. Staley and Co., the British agents for Bausch and Lomb, showed photographic shutters, field glasses, microscopes, centrifuges, ophthalmometers and various lenses. Also the new "Snappa" film camera to take twenty-four cut films, which can also be used for plates, a most compact little camera with the latest improvements.

Messrs. Burroughs, Wellcome and Co. had a stand displaying their "Tabloid" photographic products and Wellcome's Exposure Record.

The Busch Camera Company, represented by Mr. Henry F. Purser, were in evidence with lenses, opera and field glasses, telescopes and cameras.

Mr. T. P. Bethell, of Liverpool, was busy explaining the merits of his marvellously cheap cameras and enlargers.

Messrs. Tyler and England Brothers, manufactures of mounts, albums and cameras, were in a prominent position; they will shortly announce particulars of another photographic competition.

Messrs. Johnson and Sons had a fine exhibit of crystallised nitrate of silver and chloride of gold.

Mr. C. P. Goerz had a stall in the main hall close to the entrance, and made an effective display of photographs illustrating the excellent results of his well-known lenses. Field and opera glasses and the new Goerz sector shutter were also shown.

The Brooks-Watson Daylight Camera Company announce details of their new system of photography for the daylight loading and unloading of flat films. The apparatus at the time of our visit was not completed, but was in course of manufacture, which is proceeding as rapidly as possible. The first apparatus embodying this system will be a day-slide made to the same dimensions as a double dark-slide, and will be called the "Rajar."

Messrs. F. H. Taylor and Sons were the only firm whose exhibit was confined to glassware, comprising graduated measures of every description, bottles, funnels, developing cups, etc.

Messrs. Butcher and Sons, whose novelties were described last month in our photographic supplement, exhibited the "Midg," "Little Nipper," and other cameras, complete photographic outfits, "Primus" specialities, lanterns, cinematographs and other requisites. They are anxious that dealers should visit their new premises in St. Bride Street, E.C.

Lectures and demonstrations were given by Mr. T. C. Hepworth, Dr. W. Hampson, and Mr. W. F. Slater, and selections of music were performed by the imperial Orchestra. The secretary of the exhibition is Mr. Arthur C. Brookes, of Harp Alley, Farringdon Street, of the firm of Marshall and Brookes, who exhibited their various publications and specimens of printing and catalogues suitable for the photographic trade.

SOCIETY AND ASSOCIATION NEWS.

The Kinninmont Prize.—Intending competitors are reminded that their names should be sent to the Hon. Secretary, Mr. W. L. Currie, 223, Byres Road, Dowanhill, Glasgow, before the end of this month. The examination takes place in June. Particulars on application.

North-East Lancashire Chemists' Association.—A special meeting of the North-East Lancashire Chemists' Association was held on Wednesday, April 16, at the White Bull Hotel, Mr. W. H. Grimshaw in the chair, to discuss the apprenticeship question. There was a moderate attendance.

Reading and District Chemists' Association.—A conversazione was held at Reading College on Wednesday, 9th inst. There was a fair attendance, and a very pleasant evening was spent. Mr. F. F. Tunbridge gave a demonstration of the X-rays, and some excellent lantern slides were shown by Messrs. Cardwell and Tunbridge. Other objects of interest were exhibited by various members, and a musical programme rendered by the ladies.

Sheffield Pharmaceutical and Chemical Society.—At a meeting of this Society, held on Wednesday, April 16, the President, Mr. John Austen, read a paper entitled, "Historical Notes on Old Sheffield Druggists." The paper was illustrated by means of a few old portraits, photographs, MS. recipe books, old pharmacopœias, apothecaries' and druggists' jars, and other relics. The following is a synopsis of the paper:—Pharmacy in Sheffield prior to 1750; a few old physicians and apothecaries; the evolution of the chemist and druggist; notes on twelve Sheffield druggists of the eighteenth century—their shops and trade; Sheffield druggists from 1800 to the formation of the Pharmaceutical Society in 1841; the thirteen Sheffield founders; druggists from 1841 to 1868. The lecture was illustrated by old medical books, manuscript recipe books, and other curiosities. At the close a hearty vote of thanks was passed to Mr. Austen, on the motion of the Chairman, seconded by Mr. G. T. W. Newsholme.——The prizes offered by Mr. J. B. Pater and Mr. C. F. Carr for the best papers read by student members of the Sheffield Pharmaceutical and Chemical Society, at a meeting held on March 12, have just been awarded. Messrs. W. M. Cooper and N. S. Goodyear read papers on "Starch," and Messrs. R. Tildesley and A. A. Watts took up the subject of "Suitable Hobbies for Young Pharmacists." Messrs. C. O. Morrison and J. W. J. Turner, who were the judges, consider that the papers as a whole were excellent, and quite up to the average of last year. It may be added that the readers went thoroughly into their subjects, and displayed much knowledge of them, evidently the result of careful study. The judges award the first prize of 10s. to Mr. Goodyear, and the second prize, 5s., to Mr. Watts. Mr. Cooper's paper is placed third. Mr. Watts suggested photography as the most suitable hobby, while Mr. Tildesley dealt with photography, microscopy, botany, and electricity.

COMPANY INTELLIGENCE.

Guy's Tonic, Limited.—This company was registered on April 2, with a capital of £35,000, in £1 shares (20,000 6 per cent. cumulative preference), to take over the business of patent medicine vendors, carried on at 12, Buckingham Palace Road, London, as "Guy's Tonic Company," to adopt an agreement with G. S. Stemp, and to carry on the business of chemists, druggists, etc. No initial public issue. The first directors (to number not less than two nor more than five) are C. S. Stemp, J. White (chairman) and W. H. Hunt. C. S. Stemp may retain office for life, and J. White and W. H. Hunt may retain office so long as they hold £1,000 preference shares each. Ordinary qualification, £500. Remuneration (except managing director), £100 each per annum. The directors are also to receive, in any year when the sales exceed £50,000, 1 per cent. on the amount of the excess, and in the event of the sale of the company's assets, 7½ per cent. on the surplus available for distribution after returning the amounts paid up on the shares.

MARKET REPORT.

London, Thursday, April 17, 1902.

Business in Drugs and Chemicals has again been quiet during past week, while there are no changes of any special importance to record. People's minds have been more or less occupied with the Budget and the hopes, not to say anticipations, of an early termination to the unhappy struggle in South Africa. It has no doubt come as a certain relief that the Budget proposals do not touch the interests of the trade with which our readers are chiefly concerned. The only change of any great import has been a reduction in price of Codeine. Opium is weaker and, in consequence, also Morphine. Glycerin continues firm, as also does Cod Liver Oil. Bromides and Iodides are unchanged. Shellac firm. Acid Carbolic quiet. Quicksilver and Mercurials are in active demand, and especially Corrosive Sublimate. Camphor unchanged. Quinine steady as a result of the price obtained for Cinchona Bark at the London Sale on Tuesday, combined with the moderate shipments of Bark advised from Java for first half of present month. Chief interest of the trade has been centred in to-day's Drug Auctions, some particulars of which we give below:—

CINCHONA BARK.—Tuesday's Bark Sale in London went off fairly well, three-quarters of the not inconsiderable offerings finding buyers at an average of 1⅝d. per unit, which is slightly above parity of last Amsterdam sales; remaining one-fourth of quantity catalogued was held for higher price than was bid at the sale. Bark shipments from Java are advised as 476,000 Amsterdam lbs. for the half-month, which presumably includes the three shipping days (Wednesdays) up to April 16.

CODEINE.—In consequence, it is said, of competition on part of Swiss makers of synthetical Codeine (from Morphine), makers here reduced price 10d. per oz.. and now quote 11s. 3d. to 11s. 8d. per oz., the former figure being for 100 oz. lots, the price of the Salts being also lower in proportion.

MORPHINE—Quiet and lower at 4s. per oz. for the Hydrochlorate powder for large contracts.

OPIUM.—Market is very quiet at nominally unchanged prices. Reports respecting the new crop continue to be favourable, in which case lower prices for the article are confidently anticipated.

PHENACETIN.—It is reported that the outside makers have joined the Convention, prices being practically unchanged at 4s. 2d. to 4s. 9d. per lb. both for crystals and powder, the lowest figure being for 10-cwt. contracts deliverable over six months.

QUININE.—German makers still quote 1s. 3d. per oz. for Sulphate for 1,000-oz. lots in 100-oz. tins; while the speculative market remains very quiet at 1s. 2¼d. per oz. for B&S and/or Brunswick for spot and May delivery.

THURSDAY'S DRUG SALES.

To-day's drug auctions, the first since the Easter holidays, comprised 20 catalogues, some of which were very lengthy. Buchu leaves sold well, but at a reduction in price. Menthol was also lower. Sumatra gum benzoin was also slightly cheaper. We give some particulars below, the sales not having been completed at time of going to press.

ALOES.—15 kegs Soccotrine did not sell. 7 cases East Indian were taken out. Of 17 boxes Barbadoes, 8 boxes sold at 28s. per cwt. 21 cases pale Cape did not find favour, and were taken out at 18s. per cwt.

AMBERGRIS.—1 tin containing about 10¾ oz. was taken out nominally at 100s. per oz.

ANNATTO SEEDS.—14 bags sold at 1¼d. to 1½d. per lb.

ARECA NUTS.—31 bags of fair nuts, but some wormy, part sold at 19s. per cwt.

ARGOL.—43 bags Cape part sold at 45s. per cwt.

BALSAM TOLU.—Of 6 cases part sold at 1s. 4d. per lb.

BUCHU LEAVES.—20 bags nearly all sold at 8d. per lb. for good green rounds, and at 7½d. to 7¾d. per lb. for somewhat stalky ditto.

CALUMBA ROOT.—79 bags very poor sorts only fetched 7s. to 7s. 9d. per cwt. Other 140 bags part sold at 11s. for fair to good sorts.

CANELLA ALBA.—10 bales of fair quality were bought in at 55s. per cwt.

CARDAMOMS.—114 cases Ceylon sold at 2s. 11d. per lb. downwards, seeds at 1s. 3d. to 1s. 6d. per lb. Other 105 cases ditto at 2s. 3d. per lb. downwards, seeds selling at same parity. Other 27 cases sold at 1s. 5d. per lb. downwards, the better lots failing to sell. Other 45 cases part sold at 2s. 7d. to 2s. 8d. per lb. for good bold Mysores.

CASCARILLA BARK.—Of 52 bales part thin quilly only 2 bales sold at 45s. per cwt.

CHIRETTA.—10 bales were bought in at 2¾d. per lb.

CIVET.—1 horn fair granular was bought in at 5s. 6d. per oz.

COCA LEAVES.—5 cases Ceylon sold at 6½d. to 11¼d. per lb.

CODLIVER OIL.—Of 111 cases and 1 barrel Japan 20 cases sold prior to auction; 10 cases realised 30s. per cwt.; balance was bought in.

COLOCYNTH.—8 cases part good pale, part dark and broken, did not sell.

CRUDE ANTIMONY.—Of 50 cases 10 cases sold at £14 per ton.

CUTTLE FISH BONE.—41 mats of fair pale bold, but very broken, were taken out, 1¾d. per lb.

DIVI DIVI.—146 bags part sold at £7 17s. 6d. to £8 2s. 6d. per cwt. for the sound, and at £7 15s. for 2 CSD.

DRAGON'S BLOOD.—2 cases good bright seedy block were bought in. Other 4 cases ditto were taken out at £9 10s. per cwt. 9 cases good thin reeds also did not sell.

GALANGAL ROOT.—64 bags of bright, but poor, root sold at 22s. 6d. to 25s. per cwt.

GUAZA (CANNABIS INDICA).—Of 13 robbins 10 sold at 2s. 3d. 17 robbins siftings did not sell.

GUM ASAFETIDA.—Of 164 packages 1 case loose grey almonds realised 75s. per cwt., 1 case small ditto 65s. per cwt.

GUM BENZOIN.—77 cases Sumatra part sold at £5 15s. to £5 17s. 6d. for very poor seconds. Other 20 cases ditto sold at £6 15s. for medium seconds. Of other 20 cases of the well-known double goat brand 8 cases realised £7 7s. 6d. to £7 12s. 6d. per cwt. Of 2 cases Siam 1 case sold at £5 17s. 6d. per cwt. Of other 26 cases 1 case blocky seed sold at £6 15s.

GUM ELEMI.—26 cases of fair quality were taken out at 95s. per cwt.

GUM KINO.—4 cases African were taken out nominally at 9d. per lb.

GUM MYRRH.—2 cases good pale were bought in at £6 10s. per cwt., 3 cases small selling at 70s. per cwt.

HONEY.—149 packages Jamaica part sold at 15s. to 18s. 6d. per cwt. for casks and barrels, and at 14s. to 16s. per cwt. for tins and cases. Other 5 barrels and 7 cases realised about same parity. 40 cases Californian were taken out at 32s. per cwt.

KOLA NUTS.—Of 25 bags 20 bags sold at 1½d. per lb.

LIME JUICE.—25 packages West Indian sold at 1s. 1d. to 1s. 2d. per gallon.

MENTHOL.—5 cases Kobayashi did not sell. 4 cases Nippon sold without reserve at 12s. 3d. to 12s. 6d. per lb.

NUX VOMICA.—2 bags dark boldish Calcutta sold at 7s. 6d. per lb.

RHUBARB.—9 cases round rough horny, high dried, with greyish fracture, did not sell. Of other 40 cases 3 cases flat high dried of fairly pale fracture, sold at 8½d. per lb. 1 case medium to bold round Canton at 1s. 11d. per lb., and 1 case flat Shensi, showing very good break, at 3s. 7d. per lb.

ROSE OIL.—4 pots were taken out at 7¾d. per oz., 1 bottle settlings at 3¾d. Other 4 bottles settlings sold at 1d. per oz. Other 1 pot oil sold at 8d. per oz., and 1 bottle settlings at 2d.

SENNA.—214 bales Tinnevelly, chiefly of poor undesirable quality, sold at 3¼d. for only fair leaf downwards, according to quality. 22 bales low stalky Mecca only realised ¼d. per lb.; pods selling at 3d. per lb. downwards. Other 18 bales part sold at 1d. per lb. downwards. 4 cases common Alexandrian received *viâ* New York sold at 1½d. per lb. Other 19 bales siftings realised 2d. per lb.

SOY.—90 cases sold without reserve at 1s. 9d. to 2s. 1d.; 7 barrels at 1s. 2d. per gallon.

STROPHANTHUS SEEDS.—7 pockets good Kombé were taken out at 3s. 6d. per lb.

TAMARINDS.—2 robbins East Indian sold without reserve at 5s. per cwt.

WAX.—4 barrels Jamaica sold at £8 to £8 2s. 6d. per cwt. 7 bales Benguela at £6 15s., 4 bales Zanzibar at £6 12s. 6d. Other 74 packages part sold at £6 17s. 6d. to £7. Other 32 blocks ditto realised £6 15s. per cwt. 200 cases Japan sold without reserve at 25s. to 27s. per cwt.

DIARY OF THE WEEK.

Tuesday, April 22.

Bradford and District Chemists' Association.—Annual Dinner.

Royal Institution of Great Britain, Albemarle Street, Piccadilly, W., at 3 p.m.—"Recent Methods and Results in Biological Inquiry," by Dr. Allan Macfadyen.

Wednesday, April 23.

Pharmaceutical Society of Great Britain, 36, York Place, Edinburgh, at 8.30 p.m.—Evening Meeting: Papers on (1) "The Turpentine Test for Glacial Acetic Acid," by Thomas Dunlop; (2) "The Titration of Boric Acid and Borax," by Thomas S. Barrie; (3) "Some Methods of Dispensing," by Wm. S. Glass.

Cardiff and District Pharmaceutical Association, Park Hotel, at 8 p.m.—Smoking Concert.

Manchester Pharmaceutical Association, Victoria Hotel.—"Methods of Sight Testing," by J. C. Kidd.

Thursday, April 24.

Chemists' Assistants' Association, 73, Newman Street, W., at 8.30 p.m.—"Glass," by C. Hymans.

Midland Pharmaceutical Association.—Annual Meeting, followed by the Annual Dinner.

Royal Institution, Albemarle Street, Piccadilly, W., at 3 p.m.—"The Oxygen Group of Elements," by Prof. Dewar.

Friday, April 25.

Royal Institution, Albemarle Street, Piccadilly, W., at 9 p.m.—Dr. James Mackenzie Davidson on "X Rays and Localisation."

TRADE NOTES AND NOVELTIES.

Photographer's Vade-Mecum.—Messrs. Cadett and Neal, Ltd., Ashtead, Surrey, have published a handy pocket-book, which they call the 'Practical Photographer's Vade-Mecum.' It comprises a view meter for various plates and lenses, an exposure meter without calculations, a detachable exposure record, reference tables, etc., etc. The whole is supplied at 2s. 6d., or the exposure meter can be obtained separately at 1s.

Ammonium Chloride and Liquorice Tabloids.—It has been long recognised that the unpleasant taste of ammonium chloride may be disguised by the addition of extract of liquorice. Messrs. Burroughs, Wellcome and Co. are now making tabloids, each of which contains three grains of ammonium chloride and two grains of extract of liquorice, and presents an extremely convenient means of administering the combination. One may be allowed to dissolve slowly in the mouth as often as may be necessary.

Perfumes.—In keeping with the prevailing fashion to associate the Coronation with various novelties in fancy articles, Messrs. F. Newbery and Sons, of King Edward Street, E.C., have brought out a tasteful and dainty series of "Orb" perfumes. The bottle is the shape of that well-known emblem of monarchy which, with the sceptre and other trappings of royalty, will figure prominently in the forthcoming Coronation ceremonies.

Iron Milk.—This is a new preparation for the administration of iron in a palatable manner which the British Iron Milk Syndicate, Limited, of 115 and 116, Strand, London, W.C., is bringing before the public. It has had a very great success in Germany, and, it is stated, is now being recommended by hundreds of medical men in that country. It is claimed for iron milk that: (1) It is pleasant in appearance and flavour, (2) it in no way blackens or injures the teeth, (3) it does not set up either constipation or diarrhœa, (4) it can be safely given to the youngest child or the weakest invalid, (5) it is absolutely unique in character and most efficacious in its results.

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Notices to Correspondents.

All Communications for the 'Pharmaceutical Journal' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street Lincoln's Inn, London.

Contributions sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

Correspondents should write in ink, on one side of the paper only, and must authenticate the matter sent with their names and addresses, though not necessarily for publication. No notice can be taken of anonymous communications.

Drawings for Illustrations should be executed twice the desired size, clean sharp lines being drawn with a pen and liquid Chinese ink. Shading by washes is inadmissible. Photographs can be utilised in certain cases.

Names and Formulæ should be written with extra care, all systematic names of plants and animals being underlined, and capital letters used to commence generic but not specific names.

Reprints of Articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

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Pharmaceutical Journal

SATURDAY, APRIL 26, 1902.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

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Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

QUALIFIED ASSISTANT required for good-class Dispensing business.—Apply, S. HARDWICK, 21, Commercial Rd., Bournemouth.

WANTED end of May, Junior ASSISTANT; outdoor; not under 22.—Apply, stating age, salary required, and experience, A. PARKER, Chemist, Uttoxeter.

LONDON, S.W.—ASSISTANT, about 23, for high-class Dispensing and Retail.—RADIX, c/o Messrs. Meggeson & Co., Mills Lane, Upper Thames Street, E.C.

QUALIFIED ASSISTANT (indoors) required for good-class Dispensing and Retail business.—Apply, stating experience, &c., to ROBERT COOK, Pharmaceutical Chemist, Grimsby.

JUNIOR COUNTERMAN, for High-class branch store; tall and gentlemanly.—State age, height, salary required (outdoor), with photo and references, to WAND, Cash Chemist, Haymarket, Leicester.

WANTED, with Minor qualification, ASSISTANT (Lady or Gentleman), for light Retail, Dispensing and Photographic business; indoors.—ERIC LEMMON, Pharmacist, 47, High St., Exeter.

SLOUGH.—Qualified ASSISTANT wanted, at once, of good experience; indoors; salary £60.—State age and references, WALDEN, Chemist.

WANTED, qualified ASSISTANT (outdoor), for the Dispensing counter, therefore must be a quick and accurate Dispenser.—Apply, F. J. GIBSON, Chemist, Wolverhampton.

ASSISTANT wanted, with experience in select Dispensing establishment, and qualified; two kept.—Apply, stating experience, salary required (indoors), &c., WHISTON & Co., Chemists, St. James's Sq., Bath.

Assistants Wanted—Continued

LONDON, W.—JOHN F. HARRINGTON, 45, Kensington High St., requires a qualified ASSISTANT, accustomed to first-class Dispensing and Retail; bedroom provided; board out.—Apply, stating full particulars.

AN ASSISTANT for Dispensing (indoors); must be quick and accurate.—Apply personally if possible, if by letter give all particulars, with salary required, to J. G. SHIRLEY & SON, 2, Westbourne Grove, Bayswater, W.

WANTED, qualified ASSISTANT, with good agricultural experience; must be quick and accurate in his work and good salesman; outdoor.—Address, ROBERTS & TAYLOR GIBSON, 17, Bigg Market, Newcastle-on-Tyne.

SUSSEX COUNTY HOSPITAL, BRIGHTON.—Wanted, an ASSISTANT DISPENSER; Minor qualification; male; hours 9.30 till 4; dinner provided; salary £70 per annum, rising to £80 by £5 yearly.—Particulars to E. FENNER, Dispenser.

WANTED, a GENTLEMAN well-trained in the Wholesale Drug Trade, who is expert at figures; progressive position.—Write, stating experience very fully, age and salary required, to C. D. W., c/o Dixon's Advertising Agency, 195, Oxford St., W.

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CAPE COLONY.—Wanted, qualified ASSISTANT, of good experience and having undeniable references; aged about 23; salary, 1st year, £12 per month; 2nd year, £13 per month; 3rd year, £14 per month; sleeping accommodation provided; second-class passage paid out; 3 years' agreement.—Apply, COLONY, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

Continued on next page.

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Assistants Wanted—Continued

A Copy of this Inset will be forwarded gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at more than two hundred addresses in the United Kingdom; a list of these will be found on page 16.

INDIA (N.W. Province).—Wanted, a good Assistant, well up in all branches of a Chemist's business; Minor qualification. Salary, 1st year 200 rupees per month, 2nd year 225 rupees per month, 3rd year 250 rupees per month; free furnished apartments; second-class passage paid out; required to start early in April; candidates must hold undeniable references.—Address, India, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

ESHER.—Junior Assistant required at once for good-class Dispensing business; near London; knowledge of Photography preferred; suit Minor Student, as time for reading can be arranged.—Apply, with full particulars and carte, to Chapman, Chemist, Esher, Surrey.

A LARGE FIRM, manufacturing Pharmaceutical Preparations, are open to entertain applications from able young Pharmacists, with a good knowledge of Therapeutics, to fill vacancies on their travelling representative staff in India, the Colonies, the Continent, and Home Districts.—Give fullest particulars as to age, experience, salary, &c., to I. C. H. D., c/o Mather and Crowther, Ltd., New Bridge St., E.C.

CALCUTTA.—Wanted at once, a qualified Assistant; age about 24 years; must be able to conduct analysis; first-class opening for a competent man. Salary, 1st year, 275 Rs. per month; 2nd year, 300 Rs. per month; 3rd year, 325 Rs. per month, and 4th year, 350 Rs. To a candidate of exceptional experience the salary will be increased. 4 years' agreement. Second class passage paid both ways.—Apply by letter to Calcutta, c/o Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

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CAPE COLONY.—Wanted, good Assistant, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £150; second year, £160; third year, £170; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, Cape, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified Assistant; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to Straits Settlements, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

JUNIOR; 21; London preferred.—E. H. Kent, 2, Clare Gardens, Cardiff.

LOCUM TENENS; M.P.S. — Charlesworth, Ardilaun, Frizinghall, Yorks.

LOCUM, M.P.S.; town or country; disengaged.—W. Smith, 12, Westfield Rd., Surbiton.

Engagements Wanted—Continued

LOCUM; qualified; good references.—Opticus, 136, South Rd., Erdington, Birmingham.

PART-TIME; 25; unqualified; indoors; good references.—Stanser, 87, Brockley Rd., S.E.

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PERMANENT or Locum; qualified; 25; highest credentials, disengaged after Whitsun.—Full particulars to J. T. Beynon, St. Clears.

QUALIFIED; 27; experienced Dispensing, Photography; disengaged; outdoors, and North of England preferred.—Wilkinson, 28, Finsbury Rd., Leeds.

PHARMACEUTICAL Chemist desires situation in first-class Retail business; 5 years with G. T. D. Newsholme.—T. T. Cocking, Collegiate Crescent, Sheffield.

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EXHIBITORS.—Chemists' Exhibition, Manchester, June; engagement wanted by experienced qualified chemist.—Energetic, Pharm. Journal Office, 8, Serle St., W.C.

LADY, holding Apothecaries' Hall Certificate, seeks re-engagement, Doctor or Institute; has dispensed London Doctor's large practice.—L. K., 78, Queen's Rd., Finsbury Park, N.

LOCUM TENENS; days, weeks; moderate; reliable; engagements booked forward.—T. C. Beach, M.P.S., Windsor Edge, Inchbrook, Stroud, Glos. Telegrams: Beach, Nailsworth.

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ASSISTANT requires permanency; 22; married; unqualified; abstainer; good counterman, window-dresser, or dispensing; knowledge of Photography; 32s. week.—F. C., 1, Nightingale Villas, Benhill St., Sutton.

EMERGENCY.—Locum Tenens; mixed business; qualified: abstainer; Extractor, Prescriber; excellent recent testimonials; twenty years' experience; usual terms; disengaged.—Brewerton, 133, Liverpool Rd., Birkdale, Southport.

MANAGER; qualified; excellent all-round experience (London and provincial), with some wholesale; counter work; dispensing; photography; book-keeping, &c.; 24; tall; reference from present employer.—Celeritas, 70, Park Rd., Newcastle-on-Tyne.

A YOUNG Man, Pharmacien by examination, with slight knowledge of the English language and thorough knowledge of both French and German, desires a situation on the 1st of July as Assistant in a first-class Pharmacy.—Address, Mr. Monnin, Notaire, Moutier, Switzerland. H 30775.

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BLACKPOOL.—Chemist and Photographic Stock and Fixtures to be disposed of, proprietor having Medical Army Appointment; shop can be had; low rental.—Crosher, 1, Kensington Buildings, South Shore, Blackpool.

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OFFERED.

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Photographic Mounts. 2,500 cabinets, 25s.; 2,000 C.D.V.'s, 7s. 6d. to clear.—Edward Peck, East Dereham.

African Curios, Weapons, Skins, Photos Battlefields for cash; information about Employment, Shares, Mining, 2s. 6d. —James Frederick Janssen, Expert, Durban, Africa.

OFFERED—*Continued.*

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Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

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STOCKPORT.—Mr. W. B. Orton, 67, St. Petersgate.
STOCKTON-ON-TEES.—Messrs. Brayshay & Son.
STOKE-ON-TRENT.—Mr. F. Adams, High St.
SUNDERLAND.—Mr. C. Ranken, Stockton Road.
TODMORDEN.—Mr. H. P. Lovatt, 6, Water Street
TOTTENHAM.—Mr. A. E. Tanner, Tottenham Ter..
TUNBRIDGE WELLS.—Mr. A. E. Hobbs.
ULVERSTON.—Mr. R. Willan, 5, Market St.
WAKEFIELD.—Mr. J. H. Chaplin, 60, Westgate.
WALSALL.—Mr. E. M. Elliott, 42, Park St.
WARRINGTON.—Mr. H. N. Ashton, 63, Sankey St.
 Mr. J. Rymer Young, 40, Sankey St.
WESTON-SUPER-MARE.—Mr. John Cooper.
WIDNES.—Mr. C. J. Bennett, 32, Victoria Rd.
WIGAN.—Mr. J. Phillips, 58, Wallgate.
WINCHESTER.—Mr. A. E. Chaston, High St.
WINDSOR.—Mr. B. Westlake, 91, Peascod St.
WOLVERHAMPTON.—Mr. T. J. Gibson.
WOOLWICH.—Mr. A. J. Wing, 69, Powis St.
WORKINGTON.—Mr. J. R. Mason, 4, Pow St.

Wales.

ABERAVON.—Mr. G. B. Loveluck, High St.
BANGOR.—Mr. Owen Jones, Market Place.
FLINT.—Mr. O. William Jones, Apothecaries' Hall.
HOLYHEAD.—Mr. F. J. Jones, 12, Market Place.
MERTHYR.—Mr. E. W. Harris, 128, High St.
SWANSEA.—Mr. N. M. Grose, 8, Temple St.
WREXHAM.—Mr. C. G. Caldecott, Regent St.

Scotland.

ABERDEEN, Mr. John Cruickshank, 42, George St.
ARBROATH.—Mr. A. Naysmith, High St.
DUNDEE.—Mr. C. Kerr, 56, Nethergate.
EDINBURGH.—Mr. J. A. Forret, Brougham Place.
 Mr. C. F. Henry, 1, Brandon Terrace.
FALKIRK.—Mr. W. Forgie, 105, High St.
GLASGOW.—Mr. T. Dunlop, 181, Albert Road.
 Mr. J. A. Russell, 212, New City Rd.
 School of Pharmacy, 180, West Regent St.
 Mr. J. W. Sutherland, 127, Buchanan St.
GREENOCK.—Mr. A. McNaught, 4, W. Blackhall St.
HAWICK—Mr. W. S. Turnbull, 2, Dovemount Pl.
KIRKCALDY.—Mr. David Storrar, 228, High St.
LEITH.—Mr. J. Bowman, 3, Duke St.
LINLITHGOW.—Mr. A. Spence, 135, High St.
MONTROSE.—Mr. A. Davidson, 172, High St.
PAISLEY.—Mr. A. Fraser, 100, High St.
PETERHEAD.—Mr. J. F. Tocher, 1, Chapel St.
STIRLING.—Mr. John Raffan, 16, Port St.

Ireland.

BELFAST.—Messrs. Grattan & Co., Ltd.
 Mr. J. B. Robinson, Duncairn Medical Hall.
 Mr. J. C. Payne, 13, Shaftesbury Sq.
CORK.—Mr. T. R. Lester, 106, St. Patrick St.
DALKEY.—Mr. G. D. Beggs, Medical Hall.
DUBLIN.—Apothecaries' Hall, 40, Mary St.
 Mr. J. I. Bernard, 26, Clare St.
LIMERICK.—Messrs. John Laird & Co.
LONDONDERRY.—Messrs. Maxwell, Greer & Co
WATERFORD.—Messrs. G. White & Sons.

PHARMACEUTICAL SOCIETY.

OFFICIAL NOTICES.

ANNUAL SUBSCRIPTIONS.

Subscription payable by Members	One Guinea
Subscription payable by Student-Associates ..	Half-a-Guinea
Life Subscription (Members)	Ten Guineas

The last day for the payment of the Subscriptions for 1902 (due January 1) is

WEDNESDAY NEXT, THE 30th INSTANT.

Members who have not paid the current year's subscription will not be entitled to vote in connection with the election of the Council or Auditors, or to attend the Annual General Meeting on May 28.

Subscriptions should be remitted by Post-Office Order, Postal Orders, or Cheque, direct to the Secretary, 17, Bloomsbury Square, or may be paid at the Offices in London or in Edinburgh.

Cheques should be drawn in favour of RICHARD BREMRIDGE, or Bearer, and crossed "London and Westminster Bank," and Post Office Orders and Postal Orders should be made payable at the Western Central District Post Office.

THE ANNUAL DINNER

OF THE MEMBERS OF

THE PHARMACEUTICAL SOCIETY OF

GREAT BRITAIN

AND THEIR FRIENDS

Will be held on Tuesday, May 27, 1902, at the Whitehall Rooms, Hôtel Métropole, at 7 o'clock.

Tickets, One Guinea each (including wine), can only be obtained from the Honorary Secretary to the Dinner Committee, 17, Bloomsbury Square, W.C.

SCHOOL AND COLLEGE NEWS.

School of Pharmacy Football Club.—At the recent annual fixture. "Square" *v.* Past Students, the latter appeared in colours for the first time, viz., bright blue shirts with dark knickers. These are to become the permanent colours of the Old Boys' team in future matches, and in response to a "whip round" by Mr. Surfleet, the cost of them has been defrayed by the following past-students interested in the game:—Messrs. Addison, Collenette, Francis, Garsed, Happold, Hellyar, Lescher, Nelson, Northey, Owen, Stiles, Sturton, Surfleet, and Warren.

Calendar for May, 1902.

Day of M	Day of W	Events of the Month.	Sun Rises	Sun Sets.
1	Th	Chemists' Assistants' Association at 8.30 p.m. Linnean Society at 8 p.m. Royal Institution, Annual Meeting, at 5 p.m.	4.35	7.20
2	F	Royal Institution, at 9 p.m. Meeting of Chemists of North-East Scotland, at Aberdeen, at 9.15 p.m.	4.33	7.22
3	S	Royal Institution at 3 p.m.	4.32	7.24
4	**S**	**Fifth Sunday After Easter.**	4.30	7.25
5	M	Royal Institution, Monthly Meeting, at 5 p.m. Wolverhampton Chemists' Association.	4.28	7.27
6	Tu	Pharm. Soc. G. B., Finance and other Committees. Midland Pharmaceutical Association Annual Meeting and Dinner. Wakefield Chemists' Association.	4.26	7.28
7	W	● New Moon, 10.45 p.m. Pharm. Soc. G.B., Council Meeting, at 11 a.m. Pharm. Soc. of Ireland, Council Meeting, at 3 p.m.	4.24	7.29
8	Th	Chemists' Assistants' Association, at 8.30 p.m.	4.23	7.30
9	F	Royal Institution at 9 p.m.	4.21	7.31
10	S	Royal Institution, at 3 p.m.	4.20	7.33
11	**S**	**Sunday After Ascension.**	4.18	7.35
12	M	Sir John Herschel died 1871; born March 7, 1792.	4.16	7.37
13	Tu	Royal Institution at 3 p.m.	4.14	7.39
14	W	◗ First Quarter, 1.40 p.m. Pharm. Soc. G. B., Library, etc., Committee.	4.13	7.40
15	Th	Chemical Society at 8 p.m.	4.11	7.42
16	F	Royal Institution, at 9 p.m.	4.10	7.43
17	S	Royal Institution, at 3 p.m.	4.8	7.45
18	**S**	**Whit Sunday.**	4.7	7.46
19	M	Bank Holiday.	4.6	7.47
20	Tu	Royal Institution, at 3 p.m.	4.4	7.48
21	W	Western Chemists' Association, at 9 p.m.	4.3	7.50
22	Th	○ Full Moon, 10.46 a.m.	4.2	7.51
23	F	Royal Institution, at 9 p.m.	4.1	7.52
24	S	Linnean Society Anniversary, at 3 p.m. Royal Institution, at 3 p.m.	4.0	7.54
25	**S**	**Trinity Sunday.**	3.59	7.56
26	M	St. Augustin	3.58	7.58
27	Tu	Pharm. Soc. G.B., Annual Dinner	3.56	7.59
28	W	Pharm. Soc. G.B., Annual Meeting, at 12 noon Chemical Society at 5.30 p.m.	3.55	8.0
29	Th	Pharm. Soc. G.B., Adjourned Annual Meeting, at 3 p.m.	3.54	8.1
30	F	◖ Last Quarter, 0.0 p.m. Royal Institution, at 9 p.m.	3.53	8.2
31	S	Royal Institution, at 3 p.m.	3.52	8.3

NOTES IN PARLIAMENT.

The Air in the House of Commons.—Answering Dr. Farquharson, the First Commissioner of Works (Mr. Akers Douglas) has stated that the recent tests of the air in the House of Commons show a very good result as regards the amount of carbonic acid, which was only 5·2 volumes in 10,000, very little in excess of the quantity usually met with in the air of cities, and far less than what is generally present in places of assembly. The bacteriological test revealed an undue number of micro-organisms, but none of them are found to be disease producing. The full reports of Dr. Thorpe, the Principal of the Government Laboratory, will be laid before the Select Committee on the Ventilation of the House, and Mr. Akers-Douglas proposes that further experiments shall be made in order to discover the cause of the presence of so many microbes, with a view to taking suitable measures of improvement. He will also consider a suggestion as to testing the air at other Government buildings, but he could not take any action with respect to the Central Criminal Court, which is not in any way under his control.

The Grain and Flour Duty.—In the course of the last few days there have been a large number of questions put to the Chancellor of the Exchequer on the subject of his Budget proposals. Answering Mr. Bayley and Mr. Channing, the right hon. gentleman has stated that it is not proposed to include linseed and cottonseed in the list of articles liable to the new duty; that linseed and cottonseed cake will be similarly excluded, provided no dutiable article is used in the manufacture; and that it is not intended to include rape seed in the new duty. Sir C. Dilke asked whether the attention of the right hon. gentleman had been called to the fact that the duty on rice was repealed, together with that on dates, nuts, and many other articles in 1860, and was not a portion of the grain duty amended in form in 1864, and repealed in 1869. He also asked whether on any previous occasion so-called locust beans, being the fruit of the carob tree, had been included as grain in taxation. Sir M. Hicks-Beach replied that the duty on rice in grain was abolished in 1860, but rice dust and meal were included in the Budgets of 1860 and 1864, at the rate of 4½d. per cwt. This latter duty was abolished in 1869. Locust beans, until a few years ago, were included under the heading "Beans," and as such were taxed under the old Registration Duties of 1860 and 1864.

Sago and Tapioca Flour.—The Chancellor of the Exchequer was on Monday asked by Mr. Warr whether the intention of the Budget resolution is to include under the word flour such articles as sago flour, mandioca flour, dextrine and tapioca flour, "all of which articles are unfit for human food, and are used exclusively in the manufacture of fine goods for sizing purposes and for the purpose of commercial gum making."—Sir Michael Hicks-Beach replied that all the articles specified in the question are liable to duty under the resolution. He added that he was not aware that the articles, "sago flour and tapioca flour, for example," were unfit for human food.

Temperance Drinks.—The Chancellor of the Exchequer, replying to Mr. Corrie Grant, has stated that there is no law which enables the Board of Inland Revenue to charge duty upon so-called temperance drinks if they are found to contain more than 2 per cent. of proof spirit. But during the last three years proceedings have been instituted in 136 cases in which the penalty had been incurred by the sale of such drinks without a licence.

Cooked Opium.—The Secretary of State for India was on Monday asked by Mr. Caine whether the Government of Burma had, in taking over the monopoly sale of opium for that province, made arrangements for the retail sale of cooked opium, specially prepared for smoking purposes.—From the reply of Lord Geo. Hamilton it appears that some modifications in the regulations for the licensed sale of opium in Burma have been recently introduced, but Lord George has received no information of any such arrangements as the hon. member referred to.

LATE NEWS.

Medicine Stamp Duty Acts.—The recent action against Mr. Sanguinetti (see *P.J.*, March 29, p. 261) was mentioned in the Divisional Court on Wednesday, when a rule *nisi* was granted—on the application of Sir Edward Carson, who appeared for the Inland Revenue authorities calling upon the Brentford magistrates to show cause why they should not state a case.

Morphine or Strychnine?—An inquest was held at Woolwich on April 18, in connection with the death of Dr. Ingledew, of Nightingale Lane, Plumstead. It was stated that deceased had been in the habit of taking morphine, and sent to Mr. A. Goldthorpe, chemist, Plumstead, for a drachm of morphine hydrochloride on April 11. On the following day he died suddenly, having previously expressed the opinion that strychnine had been sent instead of morphine. The medical evidence, however, did not bear out that view, a *post-mortem* examination having disclosed no trace of strychnine poisoning. Ultimately, the inquest was adjourned in order that analyses might be made.

SOCIETY AND ASSOCIATION NEWS.

Chemists' Assistants' Association.—Mr. A. W. Waring will preside at the last "musical and social" on May 1.

London Chemists' Association.—A meeting will be held on Wednesday, April 30, at 3.30 p.m., in the Surrey Masonic Hall, Camberwell, to appoint a Local Committee for South London.

Proprietary Articles Trade Association.—The Committee of this Association has forwarded a letter to Sir Michael Hicks-Beach, Chancellor of the Exchequer, protesting against the proposed increase in the Stamp Duty upon cheques.

A Meeting of Chemists of the North-East of Scotland will be held in Gordon's College, Aberdeen, on Friday, May 2, at 9.15 p.m., under the auspices of the Aberdeen Pharmaceutical Association and the East Aberdeenshire Association, to hear Mr. J. F. Tocher explain his scheme of pharmaceutical education.

Edinburgh District Chemists' Golf Club.—The spring holiday competition of this Club was held at North Berwick, on Monday the 21st inst., with the following results:—Captain's prize and Gibson Handicap Medal (after playing off tie), Mr. W. W. Ainslie, 99, scratch; Mr. Duncan McLaren, 109, less 10, 99, second; Mr. James Stott, 103, scratch, third.

Edinburgh Chemists', Assistants', and Apprentices' Association.—A meeting of this Association was held on Wednesday, April 16, Mr. J. G. Sclater (President) in the chair. Papers were read on "Liquid Extract of Nux Vomica" by Mr. Fraser McDiarmid, "The Solvent Action of Sodium Salicylate" by Mr. Archibald Currie, and on "Compressed Tablets" by Mr. James Sivewright.

Chemists' Managers' and Assistants' Society.—The members of this Society will pay a visit to the factories of Messrs. Idris, Limited, on Wednesday, April 30, meeting at Pratt Street, Camden Town, at 3.45 p.m. All assistants and employers in London are welcome. Admission by ticket only, to be obtained from Mr. G. Cullwick, 48, High Street, Notting Hill, or from Mr. C. E. Pickering, 52, Acacia Road, St. John's Wood.

Manchester Pharmaceutical Association.—The annual meeting of this Association was held at the Victoria Hotel on Wednesday, April 23, the President (Mr. G. S. Woolley) in the chair. The usual business having been transacted, a resolution was passed protesting against the increased Stamp Duty on cheques. A letter on this subject, by Mr. Woolley, appears in this week's *P.J.* Delegates were appointed to attend the Pharmaceutical Conference at Dundee, and Mr. Kidd read an interesting paper on "Methods of Sight-Testing."

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. R. Hird, M.P.S., has opened a branch pharmacy at 30, London Road, Gloucester.

Mr. Marmaduke Richards, manager of Messrs. Maynard and Co., Limited, Singapore, expects to arrive in London about May 1, on a visit to the old country. Letters may be addressed care of Messrs. A. Durant and Co., 32, Gresham Street, E.C.

Messrs. Blackwell, Hayes and Company, Birmingham, announce that the partnership hitherto existing between Messrs. Blackwell, Hayes, and Spilsbury has been dissolved by mutual consent. The business will be carried on by Messrs. Blackwell and Hayes alone at the old address, under the style of Blackwell, Hayes and Company.

Messrs. Evans, Gadd, and Company, of Bristol and Exeter, announce that for family reasons, and having regard to the development of their business, they have converted it into a company, under the style of Evans, Gadd and Co., Limited. This change will involve no alteration in the management, the members of the old firm—Messrs. Henry Gadd and William Joseph Wippell, together with Messrs. Henry Wippell Gadd and Herbert Edward Boorne, who have long been associated with them in the conduct of the business—being directors of the new company.

MARKET REPORT.

The articles quoted here have often to be sorted in order to suit the requirements of the retail pharmacist, and the quotations given are in all cases the lowest cash prices for bulk quantities. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London, Thursday, April 24, 1902.

Business in Drugs and Chemicals has turned very quiet, the general complaint being that there is nothing doing. As a consequence, prices for many articles which are mentioned in these columns are decidedly weak, the exceptions being Cod Liver Oil and Bromides. The speculative market for Quinine Sulphate has turned very dull. Pilocarpine is lower. Acid Carbolic quiet. Glycerin steady, as far as the refined article is concerned. We give below a few quotations for some articles of chief interest: -

ACETANILIDE.—Very quiet, with sellers at 8d. per lb. for large quantity in bulk packing.

ACID BORACIC.—Without change at 22s. per cwt. for crystals, and 24s. for powder.

ACID CARBOLIC—Continues very quiet, on basis of 6½d. per lb. for the 34-35° C. ice crystal in large bulk packing, 1s. 11d. per gallon for the 60° F. crude, and 2s. 6d. per gallon for the 75° F. Liquid. 95-98 per cent. of pale straw colour, 1s. to 1s. 3d. per gallon, according to quantity, in 40 gallon casks.

ACID CITRIC—Quiet at 1s. 0¼d. to 1s. 0½d. per lb., according to quantity and make, for crystals in 5 cwt. barrels.

ACID OXALIC.—Quiet, at 2½d. to 2⅝d. per lb. nett free delivered London.

ACID TARTARIC—Quiet but steady at 11¼d. to 11½d. per lb. for English on the spot, and ¾d. per lb. less for foreign.

ALUM.—Lump is still quoted £5 10s. to £5 12s. 6d. per ton, and ground £6.

AMMONIA SULPHATE—Quiet, on basis of £12 to £12 1s. 3d. for gray, 24 per cent., London prompt.

ANTIMONY.—Regulus (English) £29 to £30 per ton, and Black Sulphide (Japan) £15 to £16.

BENZOLE.—Quiet at 7½d. for 50 per cent. prompt London, and 8½d. for 90 per cent.

BISMUTH SALTS—Are without change at 5s. 5d. per lb. for the subnitrate and 5s. 11d. per lb. for the subcarbonate.

BLEACHING POWDER (CHLORIDE OF LIME).—English is quoted £7 per ton.

BORAX.—Unchanged at 13s. per cwt. for crystals, and 14s. per cwt. for powder.

BROMIDES—Firm, in good demand at unchanged prices, on basis of 1s. 11½d. per lb. for potasii bromid.

CAFFEINE—Unchanged at 12s. 6d. per lb. for pure cryst., and 8s. 9d. per lb. for the citrate B.P.

CAMPHOR.—The monopoly price of Formosa crude has been again reduced, and is now 135s. per cwt., c.i.f. for July-September shipment. For refined the English makers still quote 2s. 3½d. per lb. for Bells and Flowers.

CODEINE.—Makers' present prices are 11s. 5d. to 11s. 8d. per oz. for the pure alkaloid, 10s. 3d. per oz. for the muriate and sulphate, and 9s. 2d. per oz. for the phosphate salt.

CODLIVER OIL.—High prices continue to be asked both for new and old Norwegian Oil, viz., 105s. to 120s. per barrel, while 4s. per gallon has been paid for Newfoundland. With the consuming season now rapidly drawing to a close, it appears, however, improbable that values can be maintained, especially in view of the dull state of business generally.

COLOCYNTH.—1s. 6d. per lb. is asked for good Turkey apple in case lots.

COPPER SULPHATE—Quiet at £18 5s. to £20 per ton for spot delivery.

COCOANUT OIL.—Firm at £32 10s. for Ceylon spot and £37 for Cochin.

CREAM OF TARTAR.—Is firm at 70s. 6d. per cwt. for first white crystals on the spot, 72s. 6d. per cwt. for powder, and 73s. 6d. per cwt. for foreign 98 per cent. ditto.

GLYCERIN.—Crude is quiet and rather lower, while the refined article is firm and unchanged on basis of 67s. per cwt. for the best white odourless, double-distilled, chemically pure, 1·260 S.G. quality, in tins and cases (2 or 4 × 56 lb. tins in a case).

GUAZA (CANNABIS INDICA).—2s. 6d. per lb. is now asked for tops, while all the siftings which were on the market have been sold at 2s. 3d. per lb.

IODIDES—Are fairly steady at unchanged prices viz., 8s. 9d. per lb. for potasii iodid., the other iodine preparations being also without change.

LINSEED OIL.—Strong at 5s. to 10s. advance. London spot pipes or barrels being quoted £30 5s. to £30 10s.

MENTHOL—Is quiet at 13s. 6d. to 14s., according to quantity, for good dry white crystals.

MERCURIALS—Are in brisk demand at unchanged prices, on basis of 3s. 0½d. per lb. for Calomel and 2s. 8½d. per lb. for corrosive sublimate.

MORPHINE.—Is weak, but unchanged, at 4s. to 4s. 2d. per oz., according to quantity, for the hydrochlorate, powder, and 2d. per oz. more for the crystalline salt.

OPIUM.—Some business has been done in Persian at late rates, viz., 9s. to 9s. 3d. per lb. Soft shipping kinds continue very scarce, there being practically none here. Druggists' quiet at 8s. to 8s. 3d. per lb., according to quality. There is no fresh news from Smyrna, except that so far the growth of the new crop appears to continue to progress favourably.

PETROLEUM OIL.—Is flat at 5⅞d. to 6d. for Russian spot and 6¾d. to 7d. for American.

PHENACETIN—Is fairly steady at 4s. 2d. to 4s. 9d. per lb., according to quantity, for crystals or powder in bulk packing.

PILOCARPINE.—The advent of another maker has led to price being reduced to 56s. 9d. per oz. for the muriate and nitrate salts in 8 oz. lots. This is still a somewhat high figure, seeing that not so many years ago the price was below 20s. per oz.

POTASH CHLORATE—Is quoted 3d. to 3½d. per lb. nett for powder or crystals, spot London.

QUICKSILVER—Is very firm at £8 15s. per bottle from the importer.

QUININE.—German makers still quote 1s. 3d. per oz. for the Sulphate for 1,000 oz. lots in 100 oz. tins, while the speculative market has turned very dull, and it would probably be possible to buy B&S or Brunswick brands for spot or May delivery at 1½d. per oz. below makers' prices, viz., at 1s. 1½d. per oz., with, however, practically no business passing.

SALICINE.—In good demand at 15s. to 15s. 6d. per lb.

SANTONINE—Unchanged at 16s. 9d. per lb. for 2 cwt. lots.

SENEGA ROOT.—Quiet, and in very little demand at 2s. 2½d. per lb.

SHELLAC.—Market is quiet, and barely steady at 118s. 6d. to 120s. per cwt. for fair TN for May delivery. Calcutta price is unchanged at 60 rupees.

SODA NITRATE—Is rather lower at £10 2s. 6d. per ton for the commercial quality, and £10 7s. 6d. per ton for the refined.

SPICES.—Black Pepper: 68 bags Aleppy sold, good fair at 5⅜d., and common gray at 5d. Penang bought in at 5½d., and good heavy Wynaad at 6¼d. White Pepper: 333 bags Singapore mostly bought in, good at 10d., fine at 11d. Chillies: 7 bags Nyassa sold, fair bright at 51s., dull at 46s. 6 bags fair bright Japan sold at 35s. 6d. Capsicums: 2 bags Natal sold, long dark red off stalk at 42s.; 100 bags Japan bought in at 25s. Cloves: 8 cases Penang sold, fair picked at 6½d. Ginger: Of 296 packages Cochin only 37 sold, washed rough medium and bold bright, in cases, at 40s.; ditto, small and medium, in bags, at 38s. Jamaica in large supply, but with good demand prices were maintained. Of 1,056 barrels 858 sold, fair to good bright at 50s. to 57s., middling to good middling at 43s. to 48s., ordinary to good ordinary 38s. to 42s. 6d.

STRYCHNINE.—Another American has decided to offer this article on this market, and is quoting pure crystals at 1s. 9d. per oz. in 25 oz. tins. In face of this new competition, which is likely to lead to "fighting," it seems probable that value of the article will still further recede.

SULPHONAL.—Bayer's make can still be purchased at 5s. per lb. for crystals or powder, in quantity and bulk packing.

THYMOL—Dull and weak at 7s. 6d. to 8s. per lb., according to quantity and make.

TURPENTINE.—Is strong and advancing, with a good inquiry. American spot being quoted 32s. 1½d. to 32s. 3d.

VANILLA.—In auction yesterday the moderate quantity offered met with good competition, and about two-thirds sold at firm rates on basis of 13s. to 15s. for fair to good 6 to 7½ inch Seychelles.

TO CHEMISTS, OILMEN, &c.

The Wrongful Use of Mineral Water Bottles and Beer and Stout Bottles.

The Members of the NATIONAL ASSOCIATION OF MINERAL WATER MANUFACTURERS, whose Registered Office is at 15, CALLS, LEEDS, will be much obliged if **Chemists, Oilmen, and others will refuse to supply CARBOLIC ACID, OIL, TURPENTINE or any other Liquid** in bottles designed to contain **Mineral Waters, Ginger Beer,** or other **Non-Intoxicating Beverages,** or in bottles designed to contain **Beer and Stout.**

The filling of any such bottles by Chemists inflicts a serious loss on the Owners of the bottles, and the Manufacturers therefore appeal to all Chemists and others to see that the rights of Bottle Owners are respected.

ALL BOTTLES REFERRED TO IN THIS NOTICE are embossed with the name or trade mark of the Owner, and are easily distinguished; there should not therefore be any difficulty in recognising them and refusing to fill them.

Signed on behalf of the National Association of Mineral Water Manufacturers,

WILLIAM TOOKE, *Secretary.*

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Are *unequalled* for Brandy and Whisky.
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LONDON GAZETTE NOTICES.

PARTNERSHIP DISSOLVED.

Robert Parkinson, John Jackson, and Albert Wilson, trading as Harrison, Parkinson, and Co., chemists and druggists, Sunbridge Road, Bradford. Debts will be received and paid by J. Jackson and A. Wilson.

DIARY OF THE WEEK.

Wednesday, April 30.

CHEMICAL SOCIETY, Burlington House, Piccadilly, W., at 5.30 p.m.—Ballot for the Election of Fellows. Papers on: "The Preparation of Absolute Alcohol from Strong Spirit," "The Vapour Pressures and Boiling Point of Mixed Liquids," "The Correction of the Boiling Points of Liquid from Observed to Normal Pressure," by S. Young; "The Properties of Mixtures of the Lower Alcohols," "The Properties of Mixtures of the Lower Alcohols with Benzene, and with Benzene and Water," "Fractional Distillation as a Method of Quantitative Analysis," "Vapour Pressures and Specific Volumes of Isopropyl Isobutyrate," by S. Young and E. C. Fortey; "Nitrogen Bromides containing the Propionyl Group," by F. D. Chattaway.

EDINBURGH CHEMISTS,' ASSISTANTS,' AND APPRENTICES' ASSOCIATION, 36, York Place, at 9.15 p.m.—Presentation of the Ewing Pharmacy Prize; Valedictory Address: "The Pharmacist in Literature," by John G. Sclater (President).

HUDDERSFIELD CHEMISTS' ASSOCIATION, Queen's Hotel, at 7.30 p.m.—Last Ordinary Meeting of the Session, and a "Smoker."

LONDON CHEMISTS' ASSOCIATION, Surrey Masonic Hall, Camberwell, S.E., at 3.30 p.m.—Meeting to Appoint a Local Committee.

PUBLIC DISPENSERS' ASSOCIATION, St. Bride's Institute, Bride Lane, E.C. at 8 p.m.—General Meeting.

Thursday, May 1.

CHEMISTS' ASSISTANTS' ASSOCIATION, 73, Newman Street, W., at 8.30 p.m.—Musical and Social Evening.

LINNEAN SOCIETY (OF LONDON), Burlington House, Piccadilly, W., at 8 p.m.—Dr. Elliot Smith on "The Mammalian Cerebellum, with special reference to the Lemurs," and on "The Brain of the Elephant Shrew-*Macroscelides proboscidens*"; Dr. R. Brown on "The Early Condition of the Shoulder Girdle in the Polyprotodont Marsupials, *Dasyurus* and *Perameles*."

ROYAL INSTITUTION, Albemarle Street, Piccadilly, W., at 5 p.m.—Annual Meeting of Members.

Friday, May 2.

CHEMISTS OF THE NORTH-EAST OF SCOTLAND, Gordon's College, Aberdeen, at 9.15 p.m.—Meeting to consider Mr, Tocher's Scheme of Pharmaceutical Education.

ROYAL INSTITUTION, Albemarle Street, Piccadilly, W., at 9 p.m.—"Experimental Researches on the Constitution of Crystals," by Professor A. E. Tutton.

PUBLICATIONS RECEIVED.

KING'S COLLEGE HOSPITAL REPORTS; being the Annual Report of King's College Hospital and the Medical Department of King's College. Edited by NORMAN DALTON, M.D., F.R.C.P., ALBERT CARLESS, M.S., F.R.C.S., JOHN PHILLIPS, M.A., M.D., F.R.C.P., and W. D. HALLIBURTON, M.D., F.R.S. Volume VII. (October 1, 1899—December 31, 1900). Pp. xxiii. + 457. Price 7s. 6d. London: Adlard and Son, 20, Hanover Square, W. 1902. From the publishers.

MERCK'S ANNUAL REPORT ON THE YEAR 1901. Published in March, 1902. London: E. Merck (Darmstadt), 16, Jewry Street, E.C. From the Publisher.

MALARIAL FEVER: ITS CAUSE, PREVENTION, AND TREATMENT. By RONALD ROSS, F.R.C.S., D.P.H., F.R.S. Ninth Edition, Revised and Enlarged. (Memoir I. Liverpool School of Tropical Medicine.) Pp. 68. Price 2s. 6d. London: Longmans, Green and Co., 39, Paternoster Row, E.C. 1902. From the Publishers.

Notices to Correspondents.

ALL COMMUNICATIONS FOR THE 'PHARMACEUTICAL JOURNAL' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street Lincoln's Inn, London.

LETTERS, NEWSPAPERS, QUERIES, and OTHER COMMUNICATIONS have been received from Messrs. Andrews, Barfoot, Barnes, Barrie, Black, Brunt, Cole, Cowdery, Cruickshank, Deed, Dunlop, Gadd, Gibson, Glass, Goldby, Hill, Horsfield, Jenkins, Johnson, Jones, Latreille, Lewis, Linton, Lunan, Lyon, Maben, Merck, Norris, Remington, Richards, Samuel, Sclater, Shuttleworth, Surfleet, Warren, Woolley.

Pharmaceutical Journal

SATURDAY, MAY 3, 1902.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

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Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

WANTED, qualified, capable ASSISTANT (married preferred); outdoor; good salary.—MARCHANT, Chemist, Eastbourne.

SLOUGH.—Qualified ASSISTANT wanted, at once, of good experience; indoors; salary £72.—State age and references, WALDEN, Chemist.

SENIOR (outdoors), qualified and desiring a permanency preferred.—GREEN & Co., Wholesale and Retail Chemists, 36, Lower Marsh, Lambeth, S.E.

WANTED, an ASSISTANT (indoors), qualified, for light Retail and Dispensing.—Apply, JOHN COOPER, Pharmaceutical Chemist, Weston-super-Mare.

WANTED, JUNIOR or IMPROVER and APPRENTICE.—State age, height, salary required, with photo and references, to HEARDER, Chemist, Plymouth.

ASSISTANT or IMPROVER wanted (indoors); good salary to suitable man.—Send photo and full particulars to G. CRAWSHAW, Hyde Park, Leeds.

JUNIOR (unqualified), indoors, wanted by May 25th, in good class business; must have had good experience.—T. H. FODEN, Pharmaceutical Chemist, King's Heath, Birmingham.

JUNIOR COUNTERMAN, for high-class branch store; tall and gentlemanly.—State age, height, salary required (outdoor), with photo and references, to WAND, Cash Chemist, Haymarket, Leicester.

QUALIFIED ASSISTANT wanted, about 23 years of age, for a Dispensing business; comfortable home; time for recreation; must be well recommended.—Apply to Mr. WADE, Chemist, Sidcup, Kent.

Assistants Wanted—Continued

JUNIOR ASSISTANT required for a general mixed business indoor.—Apply, stating age, references and salary required to HENRY CHAPMAN & SONS, Dispensing and Photographic Chemists, Scarborough.

JUNIOR or IMPROVER wanted, outdoors; hours 8 to 8, Saturdays 8 to 10; no Sunday duty; weekly half-holiday.—Apply, with full particulars, to D. JENKINS, Chemist, Bridgend, Glamorgan. Senior kept.

ASSISTANT wanted, with experience in select Dispensing establishment, and qualified; two kept.—Apply, stating experience, salary required (indoors), &c., WHISTON & Co., Chemists, St. James's Sq., Bath.

AN ASSISTANT for Dispensing (indoors), who is quick and accurate.—Apply personally if possible, if by letter give all particulars, with salary required, to J. G. SHIRLEY & SON, 2, Westbourne Grove, Bayswater, W.

ASSISTANT for Eastbourne, qualified preferred, accustomed to good-class Dispensing, outdoor.—Apply, stating salary required and usual particulars, to EARNSHAW, Victoria Place, Eastbourne, or to GOULD & Co., 456, Oxford St., London, W.

EASTBOURNE.—Wanted, experienced ASSISTANT, about 24, accustomed to good-class trade and a neat Dispenser; one with some knowledge of Photo business preferred.—State salary required and usual particulars to J. F. ANDREWS, Eastbourne. Also a JUNIOR or IMPROVER.

A QUALIFIED ASSISTANT of good experience for a high-class Dispensing and Retail business; must be a good counterman and capable of managing the Dispensing department; three qualified assistants and two apprentices kept; one seeking a permanency preferred.—SERGEANT, Chemist, Nottingham.

DISPENSER AT THE GLAMORGAN COUNTY ASYLUM, BRIDGEND.—Must be fully qualified, and have a fair knowledge of Photography; salary £120 per annum; must live within 2 miles from the Asylum.—Apply, stating age and qualifications, and enclosing copies of three recent testimonials, to the MEDICAL SUPERINTENDENT, not later than May 7th.

Continued on next page.

A Copy of this Inset is inserted in every *Pharmaceutical Journal* issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at the Publishing Office, 8, Serle St., London, W.C., and at more than two hundred addresses in the United Kingdom; a list of these addresses appeared in last week's issue.

Assistants Wanted—Continued

CAPE COLONY.—Wanted, qualified Assistant, of good experience and having undeniable references; aged about 23; salary, 1st year, £12 per month; 2nd year, £13 per month; 3rd year, £14 per month; sleeping accommodation provided; second-class passage paid out; 3 years' agreement.—Apply, Colony, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CALCUTTA.—Wanted at once, a qualified Assistant; age about 24 years; must be able to conduct analysis; first-class opening for a competent man. Salary, 1st year, 275 Rs. per month; 2nd year, 300 Rs. per month; 3rd year, 325 Rs. per month, and 4th year, 350 Rs. To a candidate of exceptional experience the salary will be increased. 4 years' agreement. Second class passage paid both ways.—Apply by letter to Calcutta, c/o Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CAPE COLONY.—Wanted, good Assistant, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £150; second year, £160; third year, £170; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, Cape, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified Assistant; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to Straits Settlements, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

AN ASSISTANT APOTHECARY AND ANALYST is required for the Government Civil Hospital, Hong Kong.

Candidates, who should be unmarried and under 27 years of age, must hold a Major Diploma and be members of the Pharmaceutical Society, and possess testimonials as to ability in the conduct of Pharmaceutical and Analytical work.

The duties of the officer appointed will be to attend to the manufacture of Pharmacopœial preparations and the general Dispensing work of the Hospital, and in the absence of the Apothecary and Analyst he will have sole control of the Hospital Pharmacy and Government Laboratory. The emoluments are £250 a year. Free furnished bachelor quarters will be provided at the Hospital. A free first-class passage to the Colony will be granted, and the term of service will be for three years, with return passage at the end of that period. If the officer's services are continued after the three years have expired, his emoluments will be raised to £275 a year, with a further rise to £300 after three years, and he will enjoy the usual privileges of the Hong Kong Government service, including pension rights, but his right to a free return passage will lapse.

Applications should be made in writing, and addressed to

The Secretary,
Pharmaceutical Society,
17, Bloomsbury Sq., London, W.C.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM; qualified; abstainer.—E. Kemp, 11, Cheapside, St. Leonards-on-Sea.

TEMPORARY or otherwise; abstainer; good reference.—Pharmacist, 107a, Aslett St., S.W.

DISPENSER, Lady (qualified) desires post; good reference. —Ryde House, Campbell Rd., Croydon.

ASSISTANT; qualified; aged 22 (nearly); outdoors.—Bene, Mayfield, Elson, Ellesmere, Shropshire.

Engagements Wanted—Continued

LOCUM TENENS *vel* Manager; West End experience.—M.P.S., 8, Serle St., Lincoln's Inn Fields, W.C.

QUALIFIED; 27; experienced; Photography; disengaged; outdoors preferred.—Wilkinson, 28, Finsbury Rd., Leeds.

QUALIFIED; 27; Senior or Manager; exceptional first-class experience.—Apply, Metol, Pharm. Journal Office, 8, Serle St., W.C.

QUALIFIED; 25; ten years' good experience; thorough knowledge Photographic trade.—Tristram, Victoria Rd. Pharmacy, Romford.

MANAGER; qualified; 45; married; good address; varied experience; Extractor; disengaged early in May.—James, 99, Ribbleton Lane, Preston.

ASSISTANT requires permanency; 22; married; unqualified; abstainer; good counterman, window-dresser, or Dispensing; knowledge of Photography; 32s. week.—F. C., 1, Nightingale Villas, Benhill St., Sutton.

MANAGING Assistant with view to Partnership or gradual succession in good Dispensing business; 30; fifteen years' experience in highest-class business; references to well-known house; willing to invest capital.—Address, Earnest, 8, Serle St., W.C.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Platinum; disused utensils and scraps.—P. Rowsell, 9, Derwent Grove, Dulwich.

Wanted.—Wall-case, 12 ft.; counter, 10 ft. or near.—Edmunds, Chemist, Kingsland, N.

Wanted.—Southall's Materia Medica, Pharmacopœia 1898, Attfield's Chemistry, and Pereira's Selecta e Prescriptis (second-hand).—Address, K. Onion, 95, Cheshire Rd., Smethwick, Birmingham.

OFFERED.

Two Iron Presses, 6-pints and 2-gallons.—Metcalfe, Chemist, Hull.

For Sale.—100 Idris "B" 7% Pref. Shares at 23s. 9d.—M., 30, Tranquil Vale, Blackheath.

Half lb. Iodoform, 6s.; ½ lb. Phenacetin, 2s. 9d.; ʒi. Atropiæ Sulph., 2s.—Eastman, Stratford.

Photographic Mounts. 2,500 cabinets, 25s.; 2,000 C.D.V.'s, 7s. 6d. to clear.—Edward Peck, East Dereham.

12 doz. bone-handled table knives, 96s.; in dozen lots, 8s. 3d.; money returned if not approved.—E. L. Wing, 9, Ranby Rd., Sheffield.

Memo.—Frena Camera, good condition, together with case of 3 magnifiers, carrying case, 1 doz. celluloid films. What offers?—G. Wise, Dockey House, Launceston.

Reynolds's "Chemistry," 4 parts, quarter-price; Luff's "Chemistry," Lapper's "Analytical Tables," Bruce's "Materia Medica," half-price; "Pocket Pharmacopœia," 1s.; "Synopsis of Materia Medica" (Stirling); singly or together.—2, Killeen Rd., Rathmines, Dublin

Pharmaceutical Journals, July, 1861, to June, 1870, unbound, six numbers missing, three duplicates; July, 1870, to June, 1884, half-bound; July, 1884, to present, about twelve numbers missing; Year Books, 1870 to 1895; cash offers.—Jones, 86, The Parade, Leamington.

America Soda Fountain for Sale; bought last year from Messrs. N. W. Stiles & Son, of New York and London; in good working order and condition; good opportunity to procure a handsome Fountain at a reasonable price.—Apply, Parke's Drug Stores, Ltd., 173, High St., Camden Town, N.W.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows:—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

BLACKPOOL.—Chemist and Photographic STOCK and FIXTURES to be Disposed of, proprietor having Medical Army Appointment; shop can be had; low rental.—CROSHER, 1, Kensington Buildings, South Shore, Blackpool.

CHEMIST and DRUGGIST.—Opening for energetic young man; capital Shop and house, Church Rd., Willesden; populous, growing neighbourhood; rent, £70; nearly new fittings, £60.—Apply, G. F. HARRINGTON, 16, Abchurch Lane, E.C.

IMMEDIATE Disposal.—Small Dispensing, &c., BUSINESS; Wine Licence; main thoroughfare of thickly-populated neighbourhood in principal Yorkshire town; rent £23; stock and fixtures about £350; returns last year £10 weekly; would be sold by valuation or offer.—Apply, YORKSHIRE, Pharm. Journal Office, 8, Serle St., W.C.

PRESTON, LANCS.—Old-established corner SHOP; good thoroughfare in populous working-class district; good house, 6 rooms beside shop, separate entrance; good opening for Prescribing, Extracting and Photography; returns £7 under management; price, valuation, about £150; rent £20.—Apply, CORTEX, Evans, Sons & Co., Liverpool.

BRADFORD.—Mixed BUSINESS; returns steadily rising; Wine Licence; Photography, Teeth Extraction; good stock; convenient shop; lease, low rent; house attached, good repair; returns about £10 weekly; full investigation courted; excellent reason for leaving; would suit young man starting in business.—Apply, WATSON, 263, Allerton Rd., Bradford.

TO PHARMACEUTICAL CHEMISTS.—For Sale, in one of the best suburbs of Manchester, an old-established BUSINESS, with Gilbey's agency; the present proprietor has conducted same for 27 years; the turnover averages about £1,350 per annum; price required, about £650.—For further particulars and to treat apply, F. B., c/o Messrs. Jas. Woolley, Sons & Co., Limited, Manchester.

Shop Fittings for Sale

10-FT. mahogany plate-glass case, fronted; serving counter; mahogany desk and case, glass shelves, mirror back, carving on top; 12 ft. run of mahogany side fittings; mahogany fronted drug drawers, bevelled glass labels, cut glass knobs, lockers under, shelves above for bottles, carved trusses and spandrils, mahogany cornice on top; counter drawers, &c., &c. Cheap for cash.—H. GOVIER (late Bowling & Govier), Shop Fitter, 207, Balls Pond Rd., London, N.

CHEMISTS WHO WISH

to make Up-to-date Improvements, Alterations, &c., would do well to consult

H. MILLS, Shopfitter, Shop Front Builder, &c.

WORKS: 63-165, OLD STREET, LONDON, E.C.

CHEAP HOUSE for Window Enclosures, Drug Fixtures, Wall Cases, Dispensing Screens, Glass Facias, Stall Plates, &c.

Chemists fitted complete. Estimates Free.

SPECIAL OFFER

Rayner's "Hedakene"

The Proprietors of this, the latest discovery for Headache and Neuralgia, are willing (in order to prove its sterling merit) to give and forward, free of cost, 12 dozen of RAYNER'S "HEDAKENE," single powders or in boxes together with 1,000 White 8 oz. Counter Wrappers and Counter Bills, in return for exhibiting neat Show Card, 20 × 15, small Dummy Display, and taking 2 dozen on sale or return. They will also advertise in Price List or Almanack, distribute handbills and samples, and assist in every way with the sale. Correspondence invited.

HEDAKENE LTD., 8, John Bright St., BIRMINGHAM.

CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., CHEMISTS' TRANSFER AGENTS, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

The Business conducted by MESSRS. ORRIDGE & CO., has been known as a Transfer Agency in the advertising columns of the PHARMACEUTICAL JOURNAL since the year 1846, and is well known to all the leading firms in the Trade.

VENDORS have the advantage of Messrs. O. and Co.'s direct attention and advice as to value without any additional fees.

PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

Terms for Valuation on application.

THOMAS TOMLINSON & SON

Chemists' Transfer Agents and Valuers,

9, NEW CANNON STREET, MANCHESTER.

VENDORS saved time and trouble by consulting before offering for sale PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address*, "TOMTOM."

Messrs. BERDOE & CO.

Expert Stock-takers & Valuers

Stock-taking is a necessity, and we undertake the work at the smallest possible cost, and guarantee not to upset the routine of business in the slightest degree. Terms on application. Businesses sold, valued and investigated. Note the address:—

35, JEWRY STREET, FENCHURCH ST., CITY

Apprenticeships

STEADY Man, good worker, with some experience, offers services as Outdoor APPRENTICE-ASSISTANT in a town where he could have the evenings free for study.—Address, with some particulars, CAVITA, Pharm. Journal Office, 8, Serle St., London, W.C.

APPRENTICE wanted, in good all-round business; moderate premium; term 3 years; hours 8.30 till 8.30; 2 hours daily for study and recreation; half-day weekly; 3 weeks' holiday; local classes. — CLARENCE H. JAMES, St. Paul's Pharmacy, Cheltenham.

Agency

NOVELTIES of the chemical-technical and cosmetic branch taken up for sale in Austria-Hungary by Vienna firm of good standing.—Address, "Neuheiten 30924" c/o M., Dukes Nachf., Advertising Agency, Vienna 1/1.

Tuition

EVENING WORK in all or any subjects of Pharmaceutical Examinations by a Pharmaceutical Chemist (Exhibitioner and Gold Medallist of the London University); central S.W. district; fully equipped Chemical and Biological Laboratories, Materia Medica Collections, &c.; postal courses a speciality.—TUTOR, Pharm. Journal Office, 8, Serle St., W.C.

TRADE NOTES AND NOVELTIES.

THE TYMA TROUGH.—Messrs. George Houghton and Son intimate that they have arranged with Mr. Reichert to give demonstrations of the Tyma Trough (for the development, washing, and fixing of rollable films) at 88 and 89, High Holborn, London, W.C., each Monday, Wednesday, and Friday, from 1.30 and 3.30 p.m. Mr. Reichert will be glad if photographers will bring their own exposed spools, which he will be pleased to develop before them free of charge.

PINK TOP CAPSULES.—Mr. E. J. Reid, 11, Dunedin House, Basinghall Avenue, E.C., again directs attention to his pink top capsules containing 5 grains each of phenalgin, and he encloses specimens of a small box in which samples are sent to medical men. The chief feature about the box is that all printed matter can be removed by the dispenser, leaving the box quite free from anything except the written instructions. Phenalgin is also supplied to chemists in tablets and as plain powder in 1 oz. bottles.

PHOTOGRAPHER'S PEERLESS NOTE BOOK.—This compact little note book is doubtless by this time well known to photographers generally; hence, in referring to the new edition, just published by Messrs. Geo. Houghton and Son, 88 and 89, High Holborn, W.C., in conjunction with Charles Letts and Co., diarists, it is only necessary to say that the book contains a quantity of valuable information for the amateur photographer, together with an accident insurance policy for £500 and a tourist's directory of dark rooms, etc., throughout the United Kingdom. It is obtainable of all photographic dealers, price 1s.

KENT'S TOOTH BRUSHES.—H.R.H. Princess of Wales, during her recent visit to Bethnal Green, inspected a board made up by the girls employed by Messrs. G. B. Kent and Sons, Limited, of 75, Farringdon Road, E.C., at their factory, Victoria Park, showing tooth brushes in course of manufacture, and as a souvenir of the visit the Princess was pleased to accept a "Coronation" box of tooth brushes made by the girls. The box contained one dozen very best tooth brushes, assorted sizes, stiffnesses, and trims, stamped on the face "Coronation," 1902, and on the back G. B. Kent and Sons, London.

MESSRS. BURROUGHS WELLCOME AND CO. send a specimen of liquorice compound powder tabloids, gr. 30 (1·944 Gm.). It is a common occurrence for patients to refuse to take compound liquorice powder as ordinarily prescribed on account of its unpleasant taste when mixed with water. The tabloid product has been introduced with the view of providing a convenient means of administering this well-known laxative. Each tabloid represents 30 grains of the compound liquorice powder of the British Pharmacopœia, and two to four may be swallowed with water for a dose. The tablets are issued in bottles containing 25 and 100.

COUNTER FOUNTAINS.—Messrs. Farrow and Jackson, Limited, 16, Great Tower Street, London, E.C., submit a catalogue of their counter fountains for iced drinks on draught; also of their aërating plant and American drink requisites. This firm was one of the earliest to recognise the superior merits of aëration by liquefied gas, advocating that method as long ago as 1888, when they first made machines for employing it. They now have on view at their showrooms, 91, Mansell Street, E., a large variety of new designs of counter fountains on the plan common in America, the machinery, fountains, and cabinets being made on the premises. Intending purchasers of "soda fountains" will do well to call and inspect Messrs. Farrow and Jackson's machines, although full details are given in the catalogue, a copy of which will be sent to any chemist on application, mentioning the *P.J.*

FLIES ARE A PEST which most housewives try to get rid of. They are beginning to buzz around even now, and in a few weeks will be here in full force. Chemists will therefore do well to lay in a stock of flycatchers. This may be a small line, but it is one in which every chemist might do good business, as customers usually buy several at once, and the profit on their sale is considerably more than many other goods carry. The "Vampire" spiral flycatcher, manufactured by Messrs. Kay Brothers, Ltd., St. Petersgate Mills, Stockport, is compact, simple, and effective, also clean and easy to handle. In order to introduce the flycatcher to chemists who have had no previous experience of it, Messrs. Kay Brothers are offering a sample gross at 7s., post paid. Wholesale terms may be had on application. The firm also supplies some very good small lines in "Tenasitine," a handy tenacious cement, and "Dak" birdlime.

COMPANY INTELLIGENCE.

G. W. KENNEY AND CO., LIMITED.—This company was registered on April 17, with a capital of £1,000 in £1 shares, to carry on the general business of a chemist, druggist, and optician; as dealers in all kinds of salts, acids, alkalis, drugs, medicines, herbs, pharmaceutical, chemical and surgical materials and appliances, patents and proprietary articles, paints, varnishes, mineral and other oils, toilet requisites; as dentists, etc. No initial public issue. Table A mainly applies. Registered office: High Street, Moreton-in-the-Marsh, Gloucestershire.

EVANS, GADD AND CO., LIMITED.—This company was registered on April 18, with a capital of £50,000 in £1 shares (34,000 preference), to acquire the business of wholesale and manufacturing chemists, wholesale and manufacturing stationers, and dealers in ammunition and gunpowder carried on by Evans, Gadd and Co., at 97, 98, 99, and 100, Fore Street, Exeter, and at 23 and 24, Redcliff Street, Bristol. The signatories are:—

	Shares.
H. Gadd, 31, St. David's Hill, Exeter, J.P., manufacturing chemist	1
W. J. Wippell, 5, Powderham Crescent, Exeter, manufacturing chemist	1
H. W. Gadd, 42, Union Road, Exeter, manufacturing chemist	1
H. E. Boorne, 49, Woodstock Road, Redland, Bristol, pharmaceutical chemist	1
H. H. Wippell, Ivy Bank, Exeter, manufacturer of church furniture	1
S. C. Gadd, 31, St. David's Hill, Exeter, manufacturing chemist	1
Mrs. A. Gadd, 31, St. David's Hill, Exeter	1

There is no initial public issue.

LUTO SOAP COMPANY, LIMITED.—This company was registered on April 22, with a capital of £500 in £1 shares, to carry on the general business of pharmaceutical, manufacturing, and general chemists, and druggists, dealers in all kinds of toilet requisites, boxes, and cases, whether of card, wood, metal, or otherwise; manufacturers of perfumes, etc., and any other business which can be carried on in connection with the same. No initial public issue. Registered without articles of association.

BORAX CONSOLIDATED.—The directors of Borax Consolidated, Limited, announce that the half-yearly coupon No. 6 of the preference share warrants to bearer will be paid on and after 1st prox., at the offices, 77-78, Gracechurch Street, E.C., or in France by the Banque Privee and Messrs. Jacquier, Falcouz et Cie, at Lyons. The directors have also decided to pay an interim dividend of 5s. on each ordinary share for the quarter ended December 31, being at the rate of 10 per cent. The transfer books will be closed from 21st to 30th inst.

SOUTHALL BROTHERS AND BARCLAY, LIMITED.—The suscription list will open on Monday next, the 5th inst., and will close on Friday, the 9th inst., for 40,000 preference shares of £1 each in this profitable and well-known undertaking. Owing to the continued growth and development of the company's business new buildings have been recently erected in a central position of Birmingham, mills have been purchased at Charford, and those at Saltley have been extended. These additions have made it necessary to increase the nominal capital of the company from £200,000 to £260,000, which has been effected by the addition of 60,000 new 5 per cent. preference shares, and the directors have been authorised to issue 40,000 of these at a premium of 1s. per share. They are cumulative as to dividend and preferential as to capital, and are entitled on any final distribution of capital to participate in any surplus assets until £1 5s. in all has been paid. Since the conversion of the business into a limited company in July, 1898, dividends have been paid regularly at the rate of 10 per cent. per annum on the ordinary shares, and a reserve fund has been formed which now amounts to close on £6,000. Further details will be found in the prospectus, which is printed in full in our advertisement pages.

THE "WILLIAM MARTINDALE MEMORIAL" FUND.

ADDITIONAL LIST OF SUBSCRIPTIONS.

	£	s.	d.		£	s.	d.
Alcock, J. E.	0	2	6	Le Seelleur, T. J.	0	5	0
Allen and Hanburys	2	2	0	Lyon, W.	0	5	0
Anderson, A. B.	0	5	0	Macdonald, Alex.	1	1	0
Anderson, G. L.	0	5	0	MacDonald, Angus	0	2	6
Archer, J. S.	0	2	6	Macintyre, J.	1	0	0
Arkinstall, W.	1	1	0	Malins, T. E.	0	5	0
Bain, J.	0	10	6	Martin, E. G.	0	2	6
Baker, J. T.	0	5	0	Mathews, H.	2	2	0
Baker, S.	0	10	6	Mathews, J. H.	2	2	0
Barker, W.	1	1	0	Matthews, H. E.	1	1	0
Barnes, J. B.	1	1	0	Medley, F.	0	2	6
Berridge, H.	1	1	0	Mitchell, D.	0	10	6
Bevan, E.	0	10	6	Moir, D.	0	5	0
Bew, J.	1	1	0	Morse, C. H. S.	0	5	0
Bletsoe, J.	1	1	0	Morson, A.	1	1	0
Boxall, T. W.	0	2	6	Morson, T.	1	1	0
Bradshaw, C. H.	0	10	6	Morson, T. P.	1	1	0
Bremridge, E.	1	1	0	Moss, J.	2	2	0
Bridge, G. E.	2	2	0	Need, J.	1	1	0
Brown, E.	0	5	0	Noble, J.	0	10	6
Brownen, G.	1	1	0	Nunn, A. W.	0	5	0
Bye, W. L. J.	0	2	6	Old, H. A.	0	2	6
Chaplin, J. L.	0	10	6	Oldham, H.	0	2	6
Clarke, J.	1	1	0	Paine, E. S.	2	2	0
Clarke, R. F.	1	1	0	Parker, R. H.	1	1	0
Clay and Abraham	1	1	0	Parrott, J.	0	10	6
Clubb, W. H.	1	1	0	Peck, E. S.	1	1	0
Cooper, F.	0	10	6	Phillips, A. J.	1	1	0
Cowley, R. C.	0	10	0	Phillips, J.	0	10	6
Crane, J. H.	0	5	0	Pidd, A. G.	1	1	0
Cross, W. G.	1	1	0	Pinchen, W. J.	0	5	0
Crozier, R.	0	5	0	Pocock, W. H. F.	2	2	0
Cummings, C.	0	5	0	Poole, J.	1	1	0
Cuthbert, R.	0	10	6	Probyn, C.	2	2	0
Dalziel, C. M.	1	1	0	Proctor, R.	0	10	6
Davenport, J. T.	2	2	0	Ragg, W. W.	0	5	0
Davidson and Kay	1	1	0	Ransom, W.	1	1	0
Dawson, P. S.	0	2	6	Ratcliffe, S.	0	2	6
Dewsbury Association	1	1	0	Rees, R. P.	0	5	0
Dick, R.	1	1	0	Reynolds, F.	0	10	6
Dickens, F.	0	5	0	Ridley, T.	1	1	0
Dobinson, T.	0	5	0	Roberts and Taylor Gibson	0	10	0
Dobson, J.	0	5	0	Robinson, J. J.	1	1	0
Dodd, W. R.	1	1	0	Robinson, R. A.	1	1	0
Dunn, J.	0	2	6	Robson, J.	1	1	0
Easton, R. A.	0	2	6	Rossiter, F.	0	2	6
Elliott, W. M.	0	5	0	Savory, A. L.	2	2	0
Evans, J. T.	1	1	0	Sawyer, H.	1	1	0
Evans, Sons, and Co.	2	2	0	Shepheard, T.	1	1	0
Foster, W.	0	5	0	Shepheard, W. F. J.	1	1	0
Francis, G. B.	2	2	0	Silverlock, H.	2	2	0
Fraser, J.	0	5	0	Simpson, H. D.	0	5	0
Frost, J. H.	1	1	0	Simpson, P.	1	1	0
Frost and Cope	1	1	0	Smart, W.	0	5	0
Garibaldi, J. A.	2	0	0	Smith, F. A. U.	0	5	0
Gatehouse, W.	0	5	0	Smith, J. H.	0	5	0
Gibson, A.	1	1	0	Smith, J. J.	0	10	6
Goff, W. E.	1	1	0	Smith, W. F.	0	5	0
Hairsine, H. S.	1	1	0	Smith, W. J.	0	5	0
Hallaway, J.	1	1	0	Soddy, F. W.	0	10	6
Hanson, A. W.	0	10	6	Southall Bros. and Barclay	1	1	0
Harrington, J. F.	1	1	0	Squire, P. W.	2	2	0
Harris, E. W.	0	5	0	Stewardson, A.	0	2	0
Harrison, J.	1	1	0	Stickland, W. H.	2	2	0
Hatfield and Son	0	10	6	Taggart, A. W.	0	10	6
Hatt, H. E.	0	2	6	Tanner, A. E.	1	1	0
Henry, C. F.	0	5	0	Taylor, E. S.	0	10	6
Heywood, J. H.	1	1	0	Taylor, T. M.	0	10	6
Hick, J.	0	10	6	Thomas, J. O.	0	2	6
Hickman, W.	0	10	6	Tocher, J. F.	1	1	0
Holmes, W. M.	1	1	0	Tompsett, L.	0	5	0
Houfe, R. W.	0	10	6	Toon, A.	0	2	6
Hugill, E. A.	2	2	0	Townson, W.	0	5	0
Hugill, J. H.	2	2	0	Vallance, A. C.	0	5	0
Hunt, R.	1	1	0	Westlake, B.	0	10	6
Idris, T. H. W.	2	2	0	Whineray, E.	0	2	6
Isaac, J. G.	0	5	0	Williams, Jas.	0	5	0
Jackson, D.	0	4	0	Williams, Jno.	0	5	0
Jenkins, T.	0	10	6	Wilson, J.	0	10	6
Jessup, R. M.	0	2	6	Withington, H. M.	0	5	0
Johnstone, C. A.	1	1	0	Wood, A.	0	5	0
Jones, R. R.	0	2	6	Wood, R.	0	10	6
Jones, W.	0	10	6	Woolley, G. S.	1	1	0
Kay, S.	1	1	0	Woolley, H.	1	1	0
Kerr, C.	1	1	0	Wretts, J. R.	1	1	0
Lawson, W.	0	5	0	Wright, A.	0	10	6
Lescher, F. H.	1	1	0	Young, Jas. R.	1	1	0

SCHOOL AND COLLEGE NEWS.

Metropolitan College of Pharmacy.—The following gentlemen, who obtained the medals at the Spring Sessional Examination, were also successful in passing the Minor Examination, held this month:—Silver medal, Mr. David Watson Lyall; bronze medals in chemistry, pharmacy, and botany, Mr. Lewis Rodhouse; bronze medals in materia medica and dispensing, Mr. Charles Ballard Baker. During the present week the College has been visited by Messrs. Branch and Hallam, both of whom have been for a considerable time acting with the troops in South Africa.

Nottingham School of Pharmacy.—The open competition for a scholarship value £15 15s., entitling the holder to six months' free tuition at this School, takes place in June. All entries must be made on or before May 31. A copy of the prospectus containing full particulars will be sent on application to Mr. A. Russell Bennet, 13, Victoria Street, Nottingham. The botanical rambles organised last year in connection with the school having proved highly successful, educationally and otherwise, arrangements have been made to continue them this season, and a cordial invitation is given to all assistants and apprentices in Nottingham and district to be present on as many occasions as they can conveniently manage to come.

SOCIETY AND ASSOCIATION NEWS.

Hastings and St. Leonard's Pharmaceutical Association.—The first annual meeting and dinner will be held on Wednesday evening, May 7, at the Castle Hotel, Hastings. The following guests have been invited:—The Mayor, the President and Secretary of the East Sussex Medico-Chirurgical Society, and the members of the Tunbridge Wells and Eastbourne Chemists' Associations. It is also hoped that the Pharmaceutical Society will be represented.

Barnsley and District Chemists' Association.—The ordinary monthly meeting of the above Association was held at the Royal Hotel, Barnsley, on Thursday, April 24. A discussion as to whom the Association should support at the pending election of the Council of the Pharmaceutical Society ended in a resolution being passed to support the following candidates:—Messrs. Glyn-Jones, Campkin, Harrington, Harrison, Southall, Young, and Morrison. The question of forming a Federation of West Riding Chemists' Associations was next discussed, and it was unanimously agreed to give every support to the Dewsbury Association in the matter.

London Chemists' Association.—Mr. F. W. Truman presided over a meeting of members of this Association, resident in South London, at the Surrey Masonic Hall, Camberwell, on Wednesday, April 30. Messrs. J. Brown, C. Bunker, J. Butterworth, S. Dawson, R. H. Jones, A. Pellew, F. Powell, H. Slator, F. Truman, D. White, W. Watson Will, and R. Willson were appointed to form a local committee to arrange regular meetings of the Association in South London. These are to be held as far as possible in different districts. A resolution protesting against the new stamp duty on cheques was unanimously carried, and the secretary was instructed to forward it to members of Parliament representing South London constituencies.

Cardiff Pharmaceutical Association.—On Wednesday, April 23, the first "smoker" in connection with this Association was held at the Park Hotel, Cardiff. The President, Mr. Robert Drane, occupied the chair, and there was a large attendance. The Hon. Sec., Mr. A. J. Bellamy, had organised a very good programme of vocal and instrumental music, and everything passed off exceedingly well. An illuminated address, which has recently been presented to Mr. A. Hagon, was on view. This address is the outcome of a desire on the part of the members of the Association to express in some tangible form their sense of the fact that the success of the Association has been largely due to the energy and ability of its first President, Mr. Hagon. The address has been framed in oak, and is signed on behalf of the members by Mr. Robert Drane. During the evening Mr. Prust called attention to the fact that Mr. Bert Jones, son of Mr. J. A. Jones, both of whom were present, had successfully passed the recent Minor Examination. This statement was received with applause. Mr. Jones suitably responded. Dr. Treharne bore eloquent testimony to the great service rendered to local pharmacy and the town generally by the President, and he mentioned the fact that the excellence of the local museum was largely attributable to his unobtrusive but hard work, and he (Dr. Treharne) invited all those present to join with him in drinking to the health of the President, Mr. Drane. The hearty way in which this invitation was accepted demonstrated the great respect in which the President is held. A most enjoyable evening closed at 11 p.m. by everyone present singing "God Save the King."

Three Towns Junior Chemists' Association.—At a meeting held at the Association Rooms, Whimple Street, Plymouth, on April 23, Mr. Norman Harris took the chair, and expressed his pleasure at the progress the Association had made, and regretted this was the last occasion upon which he would preside, as he was shortly leaving the district. He then called upon their Hon. Secretary, Mr. Lovatt, to read the annual report.—Mr. Lovatt briefly reviewed the progress made by the Association since its formation, and referred to the establishment of classes in materia medica, prescription reading, and microscopy. He was pleased to find that the well-equipped library and museum were continually being referred to. He hoped to arrange for a smoking concert to be held on May 7, and invited members to bring as many friends as they could. During the summer lectures would be discontinued, but botanical rambles would be made occasionally. He reminded the members of Mr. Weary's offer to take them through the grounds at Mount Edgecumbe and entertain them to tea. He thought it would be interesting to the students to pay periodical visits to the various chemical and allied works in the neighbourhood, and he trusted the necessary arrangements would soon be made. A junior outing would take place during this quarter, and he hoped it would receive the hearty support of the members. Mr. E. J. Groombridge was elected Chairman of the Association, and Mr. S. J. Stancombe Vice-Chairman, and Messrs. Mountford and Furze to fill the vacancies on the Committee. Mr. Groombridge, on taking the chair, expressed his thanks for the honour conferred upon him, and said he had now a very pleasant duty to perform in presenting Mr. Harris with a gold-mounted cigarette-holder on behalf of the Association as a small token of the esteem in which he was held. He hoped Mr. Harris would meet with every success in his medical career, and endeavour to make the relations of medical men and pharmacist more cordial. Mr. Harris in reply, thanked them for their kindness and the valuable gift. He would always remember the pleasant time he had spent in Plymouth. He much regretted leaving his old friends, but had decided upon taking a career in medicine. He trusted that the Association would prosper, and wished every member success.

MISCELLANEOUS NEWS.

Sale of Vinegar of Squills.—At Highgate, on April 30, Mr. Joseph Reed, chemist and druggist, of Hornsey, N., was summoned for selling vinegar of squills deficient in acetic acid to the extent of 38 per cent., inasmuch as it contained 2·57 per cent. of acetic acid only, instead of 4·2 per cent. After hearing the evidence, the Chairman said it was not such as to justify a conviction, and the case would be dismissed, the prosecution to pay the analyst's fee.

Pharmacy in Norway.—Mr. Thomas Barclay, of the firm of Messrs. Southall Bros. and Barclay, Birmingham, has just returned from a visit to the Norwegian cod fisheries, where his firm has a manufactory for the production of cod liver oil. The oil is manufactured in Norway under various conditions. Some is made on old boats hired for the season, to which the livers are taken by the fishermen. There are also numbers of little factories up and down the coast, which are of a very primitive character. The oil made under such circumstances must be of poor quality. From these factories the oil is bought up by merchants from Aalesund, Christiansand, and Bergen, who accumulate large quantities, and offer it in bulk to the various markets of the world. In regard to pharmacy generally there are only two pharmacies in the whole of Norway which could be sold absolutely by the proprietors. One is at Bergen, and the other at Christiania. In all other cases the King has the nomination of the proprietor, and no business can be sold outright by the present owner. Mr. Barclay was informed that one of the pharmacies referred to is estimated to be worth about £55,000. He went over the establishment, and found it equipped in a manner which, in his opinion, would be quite impossible in this country, unless qualified pharmacists had the same exclusive exercise of the business as in Norway, because it would be impossible to make a profit with the large amount of plant and machinery in use for such a small business. Seven qualified assistants are employed, and the warehouses are, in Mr. Barclay's opinion, quite out of proportion to the extent of the business. But with only a certain number of chemists allowed in each place, and prices regulated, they are able to do things differently. They grind their own drugs, manufacture their own extracts and galenicals, and do all kinds of distillations which would be quite impossible in this country if business on such a scale were meant to pay.

NOTES IN PARLIAMENT.

Flour and Glucose.—The Chancellor of the Exchequer was asked on April 28 by Mr. Kimber whether he was aware that flour was used in the manufacture of grape sugar (glucose), which was already taxed in proportion to its value as compared with ordinary sugar; whether he was prepared to make an exemption of flour so used from the proposed new duty on flour, or as an alternative to allow a rebate off the existing excise duty on grape sugar; and whether, failing such an exemption or rebate, the effect would be that imported grape sugar would only pay £2 15s. per ton import duty, against £3 5s. per ton paid by the home-manufactured article.—Sir M. Hicks-Beach replied that his attention had been called to this matter. He did not think that any exemption would be possible, but he would consider whether the alternative suggested in the question could be adopted.

Ophthalmia and Ringworm.—Answering Mr. Flower in the House of Commons on April 28, Mr. Long stated that, according to the latest information in his possession, the number of children suffering from ophthalmia and ringworm respectively was 413 and 325 in Metropolitan Poor-law schools, and 351 and 294 in Metropolitan workhouses and infirmaries.

Butter Standard Fixed.—Answering Sir E. Strachey in the Commons on April 21, the President of the Board of Agriculture said that, after considering the evidence of the Butter Standard Committee, which has been published for some time, he has decided at once to issue regulations under Section 4 of the Sale of Food and Drugs Act, 1899, declaring that the presence of more than 16 per cent. of water in any sample of butter shall raise the presumption that the butter is not genuine. The regulations will come into force on May 15. Questioned on Tuesday by Mr. O'Shaughnessy, Mr. Hanbury said that the question whether the sale of the article called milk-blended butter is not contrary to the provisions of the Margarine Act is now before the Law Courts on appeal, and he could not anticipate their decision. In any case the practice of adding water to butter appears to him at least as objectionable as that of adding animal fat, and should the existing law be insufficient to deal with the practice he shall no doubt have to consider whether fresh legislation is necessary.

The Cheque Tax.—The legion of tradespeople who are in the habit of paying accounts by small cheques will be considerably disgusted by the peddling compromise offered by the Chancellor of the Exchequer to the opponents of his proposal to double the stamp duty on cheques. Whilst announcing his willingness to remit the extra penny as regards cheques for sums under £2, he proposes that in the first instance the payment shall be made on all cheques, but that the drawer, when the cheque, after having been cashed, is returned to him by his banker in the ordinary way, shall present it at a post office in order to get the extra penny back again! Of course, the compromise is denounced as ridiculous. It is very sure to share the fate of Mr. Lowe's match tax; indeed, it is probable that the new duty itself will have to be withdrawn.

MARRIAGE.

Bingham—Radford.—On April 30, at St. Mary's, Snibstone, by the Rev. F. W. Atkins, William Arthur Bingham, chemist, Bournemouth, to Florence, second daughter of James Radford, Snibstone Lodge, Ashby-de-la-Zouch.

MARKET REPORT.

London, Thursday, May 1, 1902.

Business in Drugs and Chemicals generally continues exceedingly dull. There is comparatively very little doing, and this at a season of the year when reasonable hopes might have been entertained that more activity would have prevailed. The dragging of the Peace negotiations in South Africa has no doubt tended to add to the general depression, but hopes are generally expressed that we are now close to the end of what everyone, whatever his views may be, must regard as a very deplorable struggle. Peace in South Africa once restored, we may hope that a better state of affairs as regards business will prevail. There are no changes of any special importance to record. Quinine, from some apparently unexplained cause, has become exceedingly dull as far as the speculative market is concerned, while with few exceptions, the general tone is "doleful dumps." Opium and Morphine are very dull. Codeine unchanged. Quicksilver and Mercurials firm, as also are Bromides. Iodides quiet and unchanged. Acid Carbolic weak. Acid Citric and Tartaric unchanged. Cream of Tartar firm. Shellac has been lower, especially for forward delivery, but closes rather firmer but quiet.

CINCHONA BARK.—The shipments from Java during the month of April, which include five shipping days, are advised as 990,000 Amsterdam lbs., against 791,000 Amsterdam lbs. last year, and 524,000 Amsterdam lbs. in 1900. Total of the shipments for the four months is 3,100,000 Amsterdam lbs., against 3,382,000 last year, and 2,418,000 in 1900.

OILS (FIXED) AND SPIRITS.—Linseed oil is firm, while Cottonseed Oil continues strong at further advance to £24 10s. for London, crude spot May-August £25, refined spot £26 15s. to £27 10s. Coconut Oil very firm and dearer forward; Ceylon spot £33, Cochin spot £37.

QUININE.—German makers still quote Sulphate 1s. 3d. per oz. for 1,000 oz. lots in 100 oz. tins, while from second-hand the favourite speculative brands can be bought at 1s. 1½d. per oz. for spot or May delivery. This anomalous position of the article is puzzling even those who profess to best understand the market.

THURSDAY'S DRUG SALES.

To-day's Drug auctions, which passed off quietly, comprised only 14 catalogues, some of which consisted of only quite a small number of lots. 4 cases Cape Aloes realised the high figure of 41s. per cwt. Jamaica Sarsaparilla sold well at late reduction in price. The following are the particulars:—

ALBUMEN.—3 cases Chinese sold at 1s. 3d. per lb.

ALOES.—40 cases soft darkish Socotrine did not sell; 17 cases Cape all sold at 41s. per cwt. for good hard bright down to 32s. per cwt. for dull quality.

ARECA NUTS.—40 bags fresh water damaged, offered without reserve, sold "with all faults" at 11s. to 11s. 6d. per cwt. 40 bags sound realised 16s. per cwt.

BALSAM COPAIBAE.—3 kegs sold at 1s. 6d. per lb.

BALSAM TOLU.—10 cases good hard were taken out at 1s. 6d. per lb.

CALABAR BEANS.—2 bags good beans did not sell, and were taken out at 1s. 1d. per lb. Other 13 bags at 1s. 4d. per lb.

CARDAMOMS.—Fair wild native Ceylon, part sold at 2s. 3d. to 2s. 9d. per lb., latter price being subject to holders' approval. Other 131 cases Ceylon sold at 3s. per lb. downwards, according to quantity, size, etc., fair seeds selling at 1s. 7d. per lb. Other 14 cases all sold at 3s. 2d. per lb. for fair bold pale, downwards. Of other 27 cases 7 cases fair seeds sold at 1s. 6d. per lb. Of other 71 cases nearly all sold at 1s. 10d. downwards. Seeds at 1s. 6d. Other 27 cases part sold at 2s. 7d. per lb. for fair Mysores.

CASCARILLA BARK.—15 bales were taken out at 70s. per cwt.

CASSIA FISTULA.—13 bags fair pods sold at 30s. to 35s. per cwt.

CINCHONA BARK.—24 serons Grey Bark sold at 6¾d. to 7d. per lb. for the sound, and at 5½d. per lb. for ICSD.

COCA LEAVES.—Of 3 cases Ceylon 1 case good leaves sold at 1s. 1d. per lb., 1 case at 9½d., and 1 case C.D. at 6½d. per lb.

COCCULUS INDICUS.—100 bags were taken out at 10s. 6d. per cwt.

CUMMIN SEED.—10 bags fair Malta were bought in at 35s. per cwt.

DILL SEEDS.—30 bags, each about 1cwt., sold at 7s. 3d. per cwt.

ESSENTIAL OILS.—Five cases West Indian Oil of Bay were taken out at 6s. 3d. per lb. Six cases W.I. Lime Oil sold at 1s. 6d. per lb. Five cases Japanese dementholised Oil Peppermint were bought in. Ten cases 70/75 per cent. Oil Cassia, offered without reserve, sold at 2s. 3½d. to 2s. 4d. per lb. Fourteen cases Commercial Oil Eucalyptus were taken out at 1s. 1d. Other 10 cases at 1s. 4d. per lb. Three cases Lemongrass at 7d. per oz.

GUM ELEMI.—20 boxes of good flavour were taken out at £5 per cwt.

GUM BENZOIN.—28 cases Sumatra were all bought in at £7 5s. per cwt. for medium seconds. Of other 20 cases, two cases ditto sold at £7 2s. 6d. per cwt. Three cases Siam were taken out at £10 10s. per cwt.

GUM KINO.—4 cases good bright reddish Cochin were taken out nominally at 1s. per lb.

GUM MYRRH.—Three cases picked gum were taken out at £6 per cwt. Other four cases ditto at £7

HONEY.—100 cases Californian were taken out, nominally at 30s. per cwt. Other 40 cases at same figure. 33 packages Jamaica all sold at 15s. to 16s. per cwt. for good brown in cases. 5 cases not so good only realising 14s. 6d. 3 casks fetched 14s. per cwt. Other 203 packages ditto part sold at 15s. to 16s. 6d. per cwt. in casks and at 16s. to 19s. 6d. per cwt. in cases. Other 34 packages realised 16s. 6d. per cwt. for tins and cases, and 17s. 6d. to 19s. per cwt. in barrels. Of other 9 packages 2 cases sold at 18s. 30 cases Honolulu did not sell.

IPECACUANHA.—Of 23 bags Carthagena only 1 bag sold at 4s. 3d. per lb. Other 17 packages ditto also did not sell. Other 15 packages also failed to find a buyer. Of 20 bales Rio only a bale or two sold at 9s. 6d. to 9s. 9d. per lb. Other 10 bales good Rio were bought in at 10s. per lb. Of other 15 bales 5 bales S.D.'s sold at 8s. 7d. to 9s. 4d. per lb.

JABORANDI LEAVES.—1 bale good leaves was taken out at 3s. per lb., which was, of course, quite a fancy price.

KOLA NUTS.—Of 33 packages only 1 barrel, part mouldy, sold at 2d. per lb.

MENTHOL.—Three cases Kobayashi crystals were bought in at 13s. 3d. per lb.

NUX VOMICA.—160 bags good Cochin were taken out at 10s. 8d. per cwt.

ORANGE PEEL.—Ten packages fair thin cut, part sold at 5d. to 6d. per lb.

PISTACHIO KERNELS.—2 cases were bought in at 1s. per lb.

RHUBARB.—Of 9 cases Canton 1 case small round, of good colour, was taken out at 3s. per lb., 2 cases bold round selling at 1s. 9d.; balance bought in at 2s., and pickings at 1s. 8d. per lb. 2 cases good bold flat high dried at 1s. per lb. 3 cases second size flat sold at 8½d. per lb. Other 13 cases were taken out at 6½d. to 7d. per lb.

SARSAPARILLA.—43 bales Jamaica sold freely at 1s. 2d. to 1s. 3d. per lb., and the less desirable lots at 1s. 1d. Native selling at 10d. per lb. Another bale red native sold at 11½d. per lb. Other 15 bales fair Jamaica were taken out nominally at 1s. 5d. to 1s. 6d. per lb. Other 12 bales sold at 1s. 1d. to 1s. 2d. per lb., subject to owner's confirmation.

STROPHANTHUS SEED.—Of 41 bags 4 bags brownish seed sold prior to auction at 1s. 9d. per lb. Good green was taken out at 3s. 3d. per lb.

TAMARINDS.—79 packages West Indian part sold at 11s. per cwt. Other 13 bags of hard fruit were taken out at 9s. per cwt.

THYME SEED.—20 bags, each about 1cwt., East Indian, sold at 5s. per cwt.

TURMERIC.—200 bags part sold at 12s. to 13s. per cwt. for bulbs. Small fingers of fair colour were taken out at 20s.

WAX.—1 barrel Jamaica sold at £7 15s. per cwt. Other 8 packages ditto realised £7 17s. 6d. to £8. Other case W.I. at £7 12s. 6d.. 13 bags Australian were taken out at £7 10s. to £7 17s. 6d. 8 bags Morocco did not sell. 14 cases White Calcutta were bought in at £7 5s.; 2 cases ditto sold at £6 5s. and £6 10s. per cwt. 13 bales Zanzibar were taken out nominally at £7 5s. per cwt. Other sold at £7 5s. for good and £6 10s. for lower quality. 25 mats Madagascar sold at £6 12s. 6d. to £7. Other 170 packages sold at £6 5s. to £7 12s. 6d. per cwt.

DIARY OF THE WEEK.

Monday, May 5.

SOCIETY OF CHEMICAL INDUSTRY, Burlington House, Piccadilly, W., at 8 p.m.—"Mixed Carbides of Manganese and Calcium," by J. S. Brame and Professor Vivian B. Lewes; "Dangerous Chemical Substances," by Oscar Guttmann.

WOLVERHAMPTON AND DISTRICT CHEMISTS' ASSOCIATION.—"Hints on the Study of Botany" (juniors' night), by Mr. Phillips.

Tuesday, May 6.

MIDLAND PHARMACEUTICAL ASSOCIATION, Great Western Hotel, Birmingham, at 7.30.—Annual Meeting, followed by Annual Dinner. [Corrected Announcement.]

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, London.—Finance and other Committees.

Wednesday, May 7.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, London, at 11 a.m.—Meeting of the Council.

PHARMACEUTICAL SOCIETY OF IRELAND, 67, Lower Mount Street, Dublin, at 3 p.m.—Meeting of the Council.

HASTINGS AND ST. LEONARD'S PHARMACEUTICAL ASSOCIATION, Castle Hotel, Hastings.—First Annual Meeting and Dinner.

NEWCASTLE-UPON-TYNE AND DISTRICT CHEMISTS' ASSOCIATION, Hôtel Métropole, at 8.30 p.m.—Special Meeting.

Thursday, May 8.

CHEMISTS' ASSISTANTS' ASSOCIATION, 73, Newman Street, London, W., at 8.30 p.m.—Annual Meeting.

THREE TOWNS JUNIOR CHEMISTS' ASSOCIATION, Farley's Hotel, Plymouth, at 8 p.m.—Smoking Concert.

PERSONALITIES, BUSINESS CHANGES, ETC.

MR. REGINALD COLE, M.P.S., of Congleton, has opened a new business at Biddulph, Staffordshire.

MR. FREDERIC R. ELLIS, F.C.S., M.P.S., Shadwell Road, Bishopston, Bristol, has been elected a Member of the Society of Chemical Industry.

MR. ALFRED D. BREEZE, Chairman of the Plymouth Incorporated Mercantile Association, and Mr. Frank Maitland, late Chairman of Stonehouse District Council, have been elected upon the committee to discuss the amalgamation of the Three Towns.

MR. ISGOED JONES, M.P.S., Llanrwst, has for the second time been re-elected unanimously Chairman of the Denbighshire County Council. Mr. Jones is also deputed to present, on the Council's behalf, an address to His Majesty the King on Coronation Day.

MR. A. W. KING, M.P.S., of Messrs. Curtis and Co., chemists, Mandalay, recently laid the dust on the road in the neighbourhood of his dispensary by sprinkling earth-oil upon it. Since then Major Strickland and Count Calderari have experimented with earth-oil as a dust-layer on various roads and streets in the town, with considerable success, the usual dust-clouds in those thoroughfares being remarkable by their absence.

PUBLICATIONS RECEIVED.

ENCYCLOPÆDIA BRITANNICA. Vol. I. of the new volumes. Constituting, in combination with the existing volumes of the ninth edition, the tenth edition of that work, and also supplying a new, distinctive, and independent library of reference, dealing with recent events and developments. Pp. 808. London: Adam and Charles Black, "The Times," Printing House Square, London. 1902. From the Publishers.

WEST INDIAN BULLETIN. The Journal of the Imperial Agricultural Department for the West Indies. Vol. III., No. 1. Price 6d. London: Dulau and Co., 37, Soho Square, W. From the Commissioner.

AN EPHEMERIS OF MATERIA MEDICA, PHARMACY, THERAPEUTICS AND COLLATERAL INFORMATION. January, 1902. By E. H. SQUIBB, M.D., Brooklyn, New York, 1902. From the Publisher.

THE LENS: A Practical Guide to the Choice, Use, and Testing of Photographic Objectives. By THOS. BOLAS, F.C.S., F.I.C., and GEORGE E. BROWN, F.I.C. Pp. 176. Price 2s. 6d. net. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. From the Publishers.

DISINFECTANTS

The "Sanitas" Co., Lim.

are the exclusive Manufacturers of the well-known Non-poisonous

'SANITAS' PREPARATIONS

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Full Catalogue and "How to Disinfect" Book will be sent free on application to—

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The PASTEUR (*Chamberland*) FILTER

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The only filters awarded GRAND PRIX, PARIS, 1900.

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147, Houndsditch, London, E.C.

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

William Howells, of Watton House, Brecon, and Frederick James Jayne, of Church House, Talgarth, medical practitioners. Debts will be received and paid by F. J. Jayne.

Robert Hunt and Edward Napier Burnett, physicians, surgeons, and accoucheurs, Blackburn.

Thomas Garratt Forshaw and Charles Metcalfe Snow, chemists and opticians, 138, Westgate, Bradford. Debts will be received and paid by T. G. Forshaw.

Notices to Correspondents.

ALL COMMUNICATIONS FOR THE 'PHARMACEUTICAL JOURNAL' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street Lincoln's Inn, London.

CONTRIBUTIONS sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Akhurst. Atkins, Bradwall, Bellamy, Bennett, Bevan, Butterfield, Campbell, Cassell, Colley, Curtis, Farrall, Gaul, Goldby, Hadfield, Hildesheimer, Hill, Hodges, Houghton, Jones, King, Ling, McDiarmid, Marshall, Martin, Reid, Rigby, Roberts, Robinson, Stedman, Stokoe, Tyrer, Watson, Williams, Wood, Wright.

Pharmaceutical Journal

SATURDAY, MAY 10, 1902.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

A QUALIFIED ASSISTANT for first-class Retail and Dispensing.—State references, salary, &c. (indoors), CLARE & HUNT, Scarborough.

LONDON, W.—Qualified ASSISTANT (Junior), three in house.—Apply by letter, stating previous experience and salary required, F. W. D., 7, Pall Mall East, S.W.

ASSISTANT, indoors, wanted by May 26th, in good-class business; must have had good experience.—T. H. FODEN, Pharmaceutical Chemist, King's Heath, Birmingham.

WIMBLEDON.—Wanted, at once, an ASSISTANT, indoors, about 22, for good-class Dispensing business.—Apply, with usual particulars, to POOLEY & Co., 15, Hill Rd., Wimbledon.

GENTLEMAN with Minor qualifications required immediately for Dispensing in a public institution; Major student preferred.—Particulars can be obtained from the Hon. Sec., 231, Maida Vale, W.

WANTED, qualified (Minor) ASSISTANT (outdoor), for Dispensing and light Retail Business.—Apply, with full particulars, to LONG & STRICKLAND, Pharmaceutical Chemists, Bognor-on-Sea.

JUNIOR or IMPROVER wanted, good-class Retail and Dispensing; half-holiday weekly; £60; outdoor.—Apply, with full particulars and photo (if convenient), to F. FEARNLEY, 168, Chapeltown Rd., Leeds.

ASSISTANT wanted, with experience in select Dispensing establishment, and qualified; two kept.—Apply, stating experience, salary required (indoors), &c., WHISTON & Co., Chemists, St. James's Sq., Bath.

WANTED, qualified JUNIOR, for a first-class Dispensing Business; outdoor; salary to commence, £100 per annum; hours 9 to 7, duties one evening weekly, one Sunday in five.—YORKS, Pharm. Journal Office, 8, Serle St., W.C.

HENRY JEFFRIES, Guildford, requires a smart, gentlemanly JUNIOR ASSISTANT at the end of the month, accustomed to a good-class Dispensing and Retail business. Some previous knowledge of Dispensing essential. Applicants please state age, height, salary required, and enclose photo, if possible.

SEASIDE.—RANDALL & SON, Chemists, Swanage, require, till the end of October, a qualified, gentlemanly ASSISTANT, with good Dispensing experience; age about 25; comfortable bachelor establishment; half-day weekly; no Sunday duty. Please enclose photo (to be returned), with full particulars and salary required (indoors).

CAPE TOWN.—Qualified ASSISTANT wanted; salary, £12 per month first year, £13 10s. second year, and £15 third year; room supplied, but not board; second-class passage paid; three years' agreement; small commission on returns paid to a good man.—Apply, stating experience, to P. J. P. & Co., c/o John Murdoch & Co., 52, Leadenhall St., E.C.

Assistants Wanted—*Continued*

CAPE COLONY.—Wanted, qualified ASSISTANT, of good experience and having undeniable references; aged about 23; salary, 1st year, £12 per month; 2nd year, £13 per month; 3rd year, £14 per month; sleeping accommodation provided; second-class passage paid out; 3 years' agreement.—Apply, COLONY, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CAPE COLONY.—Smart, active JUNIOR wanted for country town, who has served apprenticeship and had a little counter experience. One who has passed preliminary preferred. Salary, £10, £11, and £12 per month for 1st, 2nd, and 3rd years respectively. Second-class passage paid.—Apply, stating particulars and experience, to Q. M., Pharm. Journal Office, 8, Serle St., W.C.

INDIA (N.W. Province).—Wanted, a good ASSISTANT, well up in all branches of a Chemist's business; Minor qualification. Salary, 1st year 200 rupees per month, 2nd year 225 rupees per month, 3rd year 250 rupees per month; free furnished apartments; second-class passage paid out; required to start as quickly as possible; candidates must hold undeniable references.—Address, INDIA, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CALCUTTA.—Wanted at once, a qualified ASSISTANT; age about 24 years; must be able to conduct analysis; first-class opening for a competent man. Salary, 1st year, 275 Rs. per month; 2nd year, 300 Rs. per month; 3rd year, 325 Rs. per month, and 4th year, 350 Rs. To a candidate of exceptional experience the salary will be increased. 4 years' agreement. Second class passage paid both ways.—Apply by letter to CALCUTTA, c/o Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CAPE COLONY.—Wanted, good ASSISTANT, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £150; second year, £160; third year, £170; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, CAPE, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified ASSISTANT; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second-class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to STRAITS SETTLEMENTS, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

SANITARY INSPECTORSHIPS.—Salaries £100 to £250. Numerous vacancies. Permanent appointments. Chemists or Assistants desiring change of occupation should qualify as Sanitary Inspectors. Special Postal Course of Lessons now commencing for London, Liverpool, Cardiff, Manchester, Leicester and Newcastle-on-Tyne exams. Anyone of average ability can pass. Had over 250 successful candidates, and fully half had no previous knowledge of sanitary matters.—Apply, ROBERT H. MUSHENS, Sanitary Science Teacher, Sunderland.

Assistants Wanted—Continued

TRAVELLING REPRESENTATIVES.—A London firm of Wholesale Chemists manufacturing Pharmaceutical Preparations invites applications for positions on its staff of TRAVELLING REPRESENTATIVES in India, the Colonies, the Continent and Home districts; preference will be given to alert and energetic gentlemen with a good knowledge of Therapeutics and a fair acquaintance with Pharmacy; qualification by examination for the Medical or Pharmaceutical professions preferred, but not essential.—Fullest particulars as to age, experience, salary, etc., should be sent in writing to LONDON, c/o Mather & Crowther, New Bridge St., E.C.

SOUTH AFRICA (healthy coast town).—At once, two ASSISTANTS required, one for the Wholesale and the other for the Retail. Must be thoroughly reliable, competent, steady, and of sober habits; latter most essential. Scotchmen preferred; aged from 21 to 25; Minor qualification. For the Wholesale, the Assistant must have had previous experience. For the Retail, the Assistant must have had first-class Dispensing and Retail experience. Salary, 1st year, £13 10s. per month; 2nd year, £14 10s.; 3rd year, £15 10s.; without board and outdoor (sleeping accommodation provided, conditionally, for Retail Assistant). Second-class passage paid out, and allowance on board. Three years' agreement. Address, SOUTH AFRICA, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

PARISH OF ST. PANCRAS, LONDON.

DISPENSER.

WANTED, for the Workhouse of this Parish, Pancras Rd., N.W., a DISPENSER.

Salary, £110 per annum, rising by annual increments of £5 to £120, with dinner and tea daily.

Candidates (male or female) must possess the Major or Minor qualification of the Pharmaceutical Society of Great Britain.

Applications to be made on forms to be obtained at my office, as below.

Selected candidates will be informed when and where they may attend a meeting of the Guardians.

ALFRED A. MILLWARD,
Clerk to the Guardians.

Town Hall,
Pancras Rd., N.W.,
7th May, 1902.

AN ASSISTANT APOTHECARY AND ANALYST is required for the Government Civil Hospital, Hong Kong.

Candidates, who should be unmarried and under 27 years of age, must hold a Major Diploma and be members of the Pharmaceutical Society, and possess testimonials as to ability in the conduct of Pharmaceutical and Analytical work.

The duties of the officer appointed will be to attend to the manufacture of Pharmacopœial preparations and the general Dispensing work of the Hospital, and in the absence of the Apothecary and Analyst he will have sole control of the Hospital Pharmacy and Government Laboratory. The emoluments are £250 a year. Free furnished bachelor quarters will be provided at the Hospital. A free first-class passage to the Colony will be granted, and the term of service will be for three years, with return passage at the end of that period. If the officer's services are continued after the three years have expired, his emoluments will be raised to £275 a year, with a further rise to £300 after three years, and he will enjoy the usual privileges of the Hong Kong Government service, including pension rights, but his right to a free return passage will lapse.

Applications should be made in writing, and addressed to
THE SECRETARY,
Pharmaceutical Society,
17, Bloomsbury Sq., London, W.C.

Apprenticeships

LIVERPOOL (near).—An APPRENTICE or young ASSISTANT wanted; could attend Liverpool School of Pharmacy.—Apply, stating usual particulars, to E. HINKLEY, 149, Victoria Rd., Seacombe.

YOUTH, 17, passed preliminary (with a little experience), desires to APPRENTICE himself to Chemist in large town.—C/o H. KEY, M.P.S., Chemist, 95, Wheeler St., Birmingham.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM; qualified; abstainer.—E. KEMP, 11, Cheapside, St. Leonards-on-Sea.

QUALIFIED; 25; disengaged June 1st; provinces.—McGHIE, 31, Devonshire Rd., Birkenhead.

QUALIFIED; 24; good-class Dispensing experience.—REYNOLDS, Riverslea, Crownhill, R.S.O., Devon.

LOCUM; disengaged till May 21st; qualified; good references.—SNOXELL, 75, Woodbridge Rd., Guildford.

QUALIFIED; 27; SENIOR or MANAGER; exceptional first-class experience.—Apply, METOL, Pharm. Journal Office, 8, Serle St., W.C.

QUALIFIED; 25; ten years' good experience; thorough knowledge Photographic trade.—TRISTRAM, Victoria Rd. Pharmacy, Romford.

ASSISTANT or DISPENSER; 24; experienced.—METOL, 12, Percy Rd., Watford, Herts.

TEMPORARY or otherwise; abstainer; good reference.—PHARMACIST, 107A, Aslett St., S.W.

ASSISTANT; qualified; aged 22 (nearly); outdoors.—BENE, Mayfield, Elson, Ellesmere, Shropshire.

JUNIOR; 20; 5 ft. 6 in.; disengaged end of May; London, West; in or outdoors.—Particulars to R. W., 6, Eversfield Place, St. Leonards-on-Sea.

LADY CHEMIST (Minor qualification) desires post in Laboratory of Manufacturing Chemist, or the like.—F. W. L., Pharm. Journal Office, 8, Serle St., W.C.

QUALIFIED; 26; tall; 12 years' high-class experience, Cheltenham, Harrogate and West-End; Locum or season, disengaged.—F. M., 52, Clapham Rd., S.W.

LADY, qualified DISPENSER (Apothecaries' Hall), desires post as DISPENSER; Doctor or Institute; Book-keeping.—Address, DRACHMA, Pharm. Journal Office, 8, Serle St., W.C.

LOCUM TENENS; days, weeks; moderate; reliable; engagements booked forward.—T. C. BEACH, M.P.S., Windsor Edge, Inchbrook, Stroud, Glos. Telegrams: Beach, Nailsworth.

SENIOR or responsible position; Major; 25; tall; Continental and home experience; good references; disengaged; outdoor preferred.—SIGMA, 323, Clapham Rd, London, S.W.

LADY, qualified DISPENSER (Apothecaries' Hall), desires engagement; Institute or Doctor; experience in Chemist's Book-keeping.—Address, RHEI, Pharm. Journal Office, 8, Serle St., W.C.

GENTLEMANLY ASSISTANT (unqualified) desires a situation in superior establishment; experience, etc., very good; age 24.—N. F. S., 136A, Wilmslow Rd., Fallowfield, Manchester.

A DISPENSER at an Institution, S.W., Minor qualification, would be glad to assist Doctor or Chemist morning or evening, or both; highest references.—M.P.S., 20, Euston Square, N.W.

EMERGENCY.—LOCUM TENENS; mixed business; qualified; Extractor; abstainer; recent testimonials; disengaged up to and including May 17th. Telegraph.—BREWERTON, 133, Liverpool Rd., Birkdale, Southport.

ASSISTANT requires permanency; 22; married; unqualified; abstainer; good counterman, window-dresser, or Dispensing; knowledge of Photography; 32s. week.—F. C., 1, Nightingale Villas, Benhill St., Sutton.

LOCUM, BRANCH MANAGER or SENIOR; qualified; 37; store experience and West-end; Extractor, Prescriber, and knowledge of Photography; excellent references; disengaged.—STATIM, 140, Kennington Park Rd.

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows:—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

FOR Immediate Disposal, first-class Dispensing and light Retail; returns between £800 and £900.—Apply, Quinine, Pharm. Journal Office, 8, Serle St., W.C.

HARROGATE.—Dispensing Business for Disposal. Upwards of 5,000 prescriptions; centre of town; well-stocked shop; several good paying specialities. Particulars to bona fide applicants.—X.Y.Z., 5, Dragon Parade, Harrogate.

SOUTH COAST.—A high-class Dispensing Business; old-established; splendid position, facing sea; several good proprietaries; average returns for last three years, £1,450.—Apply, Antikamnie, Pharm. Journal Office, 8, Serle St., W.C.

SHEFFIELD.—An old-established light Retail Dispensing and Photographic Business, well stocked and handsomely fitted; prominent position in main thoroughfare; returns, £3,000.—For particulars, apply to Watson & Norris, High St., Sheffield.

THORNTON HEATH (Croydon).—Old-established Business, in good road and growing neighbourhood; a bargain; a chance seldom met with; splendid opportunity for energetic person; illness reason for leaving; £125.—For particulars, apply H. B. Matthews, 4, The Pavement, High St., Thornton Heath.

HIGH-CLASS Dispensing Business in select watering-place on the South-east Coast, with valuable freehold attached; about 2,300 prescriptions copied annually; handsome pharmacy and large, well-arranged house; about £4,000 required.—Bowness, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, E.C.

WEST-END.—£4,000.—A Dispensing Business, of the highest possible character, producing a net profit of £1,000 per annum, which in the hands of two energetic men could be doubled, will be sold by lump sum, or small goodwill and valuation of stock and fixtures; bankers' or other references required.—Apply, Messrs. Berdoe & Co., Valuers, 35, Jewry St., Fenchurch St., City.

LONDON, S.W. (10 miles out).—High-class suburb; light Retail and Dispensing Business, returning between £40 and £50 weekly, at good prices; solely under management; price £1,550, or small premium and valuation of stock and fixtures; an opportunity very seldom offering; most satisfactory reasons for selling; books kept by accountant.—Salophen, Pharm. Journal Office, 8, Serle St., W.C.

Business Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

WANTED, a good Chemist's Retail and Dispensing Business, in a country market town in the Midlands, making a net profit of £300; with good dwelling house.—Particulars, returns, rent, etc., to Ryley, c/o Southall Bros. & Barclay, Birmingham.

SPECIAL OFFER

Rayner's "Hedakene"

The Proprietors of this, the latest discovery for Headache and Neuralgia, are willing (in order to prove its sterling merit) to give and forward, free of cost, 12 dozen of RAYNER'S "HEDAKENE," single powders or in boxes together with 1,000 White 8 oz. Counter Wrappers and Counter Bills, in return for exhibiting neat Show Card, 20×15, small Dummy Display, and taking 2 dozen on sale or return. They will also advertise in Price List or Almanack, distribute handbills and samples, and assist in every way with the sale. Correspondence invited.

HEDAKENE LTD., 8, John Bright St., BIRMINGHAM.

CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., Chemists' Transfer Agents, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

The Business conducted by Messrs. Orridge & Co., has been known as a Transfer Agency in the advertising columns of the Pharmaceutical Journal since the year 1846, and is well known to all the leading firms in the Trade.

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PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

Terms for Valuation on application.

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VENDORS saved time and trouble by consulting before offering for sale PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address,* "Tomtom."

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Platinum; disused utensils and scraps.—P. Rowsell, 9, Derwent Grove, Dulwich.

OFFERED.

Two Iron Presses, 6-pints and 2-gallons.—Metcalfe, Chemist, Hull.

Selecta e Prescriptis, as new; what offers?—Gowen, Fleet, Hants.

One dozen 35 oz. pale blue Syrup Bottles.—Holding, Chemist, Barnsbury, N.

Fluorescent Screen, 12 × 10; perfect condition; cost £3, will take 35s. or offers.—Fowler, chemist, Redhill.

3 dozen 2s. 6d. Welch's Invalid Port, 18s. per dozen; 4 Tapped Bars, with brackets, 6s. the lot, or exchange.—Edward Ryley, 23, Lowgate, Hull.

Memo.—Frena Camera, good condition, together with case of 3 magnifiers, carrying case, 1 doz. celluloid films. What offers?—G. Wise, Dockey House, Launceston.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 Slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

ADVERTISEMENT INSET

A Copy of this Inset is inserted in every Copy of the ***Pharmaceutical Journal*** issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. It can also be obtained by personal application, on the day of publication, at any address in the following list

WHERE THE INSET CAN BE OBTAINED.

Pharmaceutical Society of Great Britain.
17, Bloomsbury Square, London, W.C.
36, York Place, Edinburgh.

Also at the Advertising Agency of Messrs. G. Street & Co., Ltd., 30, Cornhill, E.C.; 8, Serle St., W.C.; and 164, Piccadilly, London, W.

London, E.C.

Messrs. Barron, Harveys & Co., 6, Giltspur St.
Messrs. Evans, Lescher & Webb, Bartholomew Cl.
Messrs. S. Maw, Son & Sons, Aldersgate St.
Messrs. F. Newbery & Sons, 27, Charterhouse Sq.
Imperial College, Ludgate Circus.
Mr. R. Howden, 28, Gracechurch St.

W.C.

Mr. A. E. Lawson, 60, Exmouth St.
Mr. W. Warren, 24, Russell St., Covent Garden.
City School of Pharmacy, 27, Chancery Lane.

W.

Mr. F. Andrews, 34, Leinster Terrace.
Mr. E. Beaton, 5, Lonsdale Terrace, Kew Gardens.
Mr. T. W. Cleave, St. Mary's Rd., Ealing.
Mr. R. H. Parker, 35, Clifton Rd., Maida Vale.
Mr. W. Pickard, 3, West Kensington Terrace.
Mr. S. A. Sturton, 9, Goldhawk Rd.

S.W.

Mr. H. Bate, 125, South Lambeth Rd.
Mr. W. F. Gulliver, 6, Lower Belgrave St.
Mr. W. Wilson, 281, Brixton Rd.
London College of Chemistry, 323, Clapham Rd.

N.W.

Mr. C. B. Allen, 20, High Rd., Kilburn.
Mr. J. C. Hyslop, 39, Church St., Marylebone.
Mr. C. W. Matthews, 6, Fortess Rd.
Mr. G. H. Peters, 2, Osnaburgh St.
Mr. W. J. Pinchen, 20, St. James' Par., Muswell Hill.
Mr. E. B. Stamp, High St., Hampstead.
Mr. J. W. Taplin, 3, Imperial Pde., Cricklewood.
Mr. T. M. Taylor, 13, Queen's Ter., St. John's Wood.
Mr. R. Thomas, 13, Upper Baker St.

N.E.

Mr. G. B. Barnard, 309, Hackney Rd.
Mr. T. Nicholls, 199, Wick Rd.

N.

Mr. H. Cryer, 506, Holloway Rd.
Mr. John H. Frost, 9, High St., Hornsey.
Mr. J. Holding, 169, Hemingford Rd.
Mr. J. T. Wallis, 78, Essex Rd.

E.

Mr. W. R. Barnes, The Terrace, Upton Manor.
Mr. C. E. Garman, 278, Roman Rd., Bow.
Mr. J. H. Gradidge, 393, Mile End Rd.
Mr. Snowden Kirk, 6, Chrisp St., Poplar.
Mr. J. H. Smith, 227, Commercial Rd.

S.E.

Messrs. Birch & Co., 59, Church Rd., Norwood.
Messrs. Wright, Layman & Umney, Ltd.
Mr. A. Pellew, 374, Old Kent Rd.
Mr. W. C. Sayers, 63, High St., Lewisham.
Mr. H. Wiggins, 236, Southwark Park Rd.
Metropolitan College, 160, Kennington Park Rd.
South London School, Kennington Rd.
Westminster College of Chemistry, Trinity Square.

Provinces.

BEDFORD.—Mr. J. B. Taylor, 69A, High St.
BIRKENHEAD.—Mr. H. B. Morgan.
BIRMINGHAM.—Mr. J. Poole, 13, Gt. Hampton St.
  Mr. C. Thompson, Sparkbrook.
  Mr. G. E. Perry, 171, Hagley Rd., Edgbaston.
  Messrs. F. Green & Co., Phœnix Mills, 393, Farm St.
  Mr. J. Austin, 395, Nechells Park Rd., Nechells.
  Messrs. Southall, 19-21, Lower Priory.
BLACKPOOL.—Mr. C. H. Turver, 40, Market St.
BOLTON.—Mr. Percy Knott, 1, Blackburn Road.
BOOTLE.—Mr. H. Wyatt, 223, Stanley Road.
BOSTON.—Mr. B. J. Kent, Spilsby Road.
BOURNEMOUTH.—Mr. F. E. Bilson.
BRADFORD.—Mr. A. H. Waddington, 31, Darley St.
  Mr. J. A. Mitchell, 33, St. Mary's Rd.
BRAINTREE.—Messrs. Row & Son, High St
BRENTFORD.—Mr. A. Wood, 116, High St.
BRIGHTON.—Mr. J. R. Gwatkin, 49, Grand Parade.

Provinces.—*Continued.*

BRISTOL.—Mr. B. Keen, 90, Park St.
  Mr. E. F. Young, 67, Wells Road.
BURNLEY.—Mr. J. A. Heaton, 121, St. James' St.
BURY ST. EDMUNDS.—Mr. O. A. Clark.
CAMBRIDGE.—Mr. A. S. Campkin, 11, Rose Cresc't.
CANTERBURY.—Mr. C. Bing, 43, St. George's St.
CARLISLE.—Mr. J. Hallaway, 5, Devonshire St.
CHELTENHAM.—Mr. W. Barron, 1, North Parade.
CHESTER.—Messrs. Davies & Shepheard.
CHORLEY.—Mr. W. Hill, 25, Market St.
COLCHESTER.—Mr. A. Weddell, 105, High St.
CREWE.—Mr. J. Cumming, 6, Victoria St.
CROYDON.—Mr. J. Clarke, 38, George St.
DARLINGTON.—Mr. J. Robinson.
DARWEN.—Mr. R. Shorrock, 6, Market St.
DEVONPORT.—Mr. C. T. Weary, 17, Trafalgar Pl.
DEWSBURY.—Mr. R. Gledhill, 61, Westgate.
DONCASTER.—Mr. M. H. Stiles, 2, Frenchgate.
DOVER.—Mr. R. M. Ewell, 34, Townwall St.
ENFIELD.—Mr. F. Goldby, Enfield Town.
EXETER.—Mr. D. Reid, 2, Queen St.
GATESHEAD.—Mr. Matthew Bell, 9, Brinkb'k Av.
GLOUCESTER.—Mr. W. Minchin, 15, Westgate St.
GRANTHAM.—Mr. W. Whysall, High St.
GRAVESEND.—Mr. R. Feaver Clarke 21, High St.
GRIMSBY—Mr. H. W. Colley, 253, Cleethorpe Rd.
GT. YARMOUTH.—Mr. W. S. Poll, 32, Regent Rd
HARROW-ON-THE-HILL, Mr. S. J. Gunn, High St.
HARTLEPOOL.—Mr. J. Horsley, 104, High St.
HASTINGS.—Messrs. J. Bell & Co., 22, Robertson St.
HEXHAM.—Messrs. Gibson & Son, 16 & 18, Fore St.
HEYWOOD.—Mr. F. Hazlitt, Market St.
HITCHIN.—Messrs. W. Ransom and Son.
HORNCASTLE.—Messrs. W. Kemp & Son.
HUDDERSFIELD.-Mr. R. C. Walshaw, 4, Market Pl.
HULL.—Mr. C. B. Bell, 6, Spring Bank.
  Mr. C. Hoyles, Holderness Road.
  Mr. A. Richardson, 443, Hessle Road.
IPSWICH.—Messrs. Wiggin & Son, 34, St. Matthew's.
JARROW-ON-TYNE, Mr. J. D. Rose, 18, Ormonde St.
KENDAL.—Messrs. Severs & Bateson.
KIDDERMINSTER.—Mr. M. Smith, 48, Oxford St.
LANCASTER.—Mr. J. Vince, 37, Cheapside.
LEEDS.—Mr. W. S. Baxter, Bramley.
  College of Pharmacy, 19, Springfield Place.
  Mr. F. C. Long, Headingly.
  Messrs. Reynolds & Branson, Ltd., 13, Briggate.
LEICESTER.—Mr. F. W. Goodess, Hotel St.
LINCOLN.—Mr. J. T. Birkbeck, 5, Bailgate.
LIVERPOOL.—Mr. A. Buck, 179, Bedford St.
  Mr. W. H. Clubb, 138, Smithdown Rd.
  Mr. C. W. Cooke, 323, Park Rd.
  Mr. J. W. Kelly, 16, County Road, Walton.
  School of Pharmacy, 6, Sandon Terrace.
  Messrs. Symes & Co. Ltd.
  Mr. F. Walker, Beacon Lane.
LYNN.—Mr. W. W. Crisp, 3, Saturday Market.
MAIDSTONE.—Mr. F. Corfe, 5, Gabriels Hill.
MANCHESTER.—Mr. J. H. Nidd, 714, Rochdale Rd.
  Mr. H. Kemp, 35, Wilbraham Rd., C/H.
  Mr. C. Swinn, Upper Moss Lane.
  Mr. G. L. Westmacott, 17, Market St.
  Mr. J. B. Williams, 42, Brook St.
  Messrs. Jas. Woolley, Sons & Co., Ld.
  Northern College, 100, Burlington St.
  Manchester College, 225A, Oxford St.
MANSFIELD.—Mr. D. J. Patterson, West Hill.
MORPETH.—Mr. J. Whittle, Bridge St.
NEWCASTLE-ON-TYNE.—School of Chemistry, 55, Northumberland St.
  Messrs. Proctor, Son & Clague, 11, Grey St.
NEWPORT (Mon.).—Mr. T. P. Garrett.
NORTHWICH.—Mr. G. Humphreys, High St.
NOTTINGHAM.—Mr. F. R. Sergeant.
  School of Pharmacy, 13, Victoria St.
NORTHAMPTON.—Mr. John Bingley.
NORWICH, Messrs. Fuller & Co., Rampant Horse St.
NUNEATON.—Mr. G. Iliffe, Market Place.
OLDHAM.—Mr. H. Bates, 38, George St.
OXFORD.—Mr. T. J. Burbank, 116, Walton St.
PETERBOROUGH.—Messrs. Sturton & Sons.
PLYMOUTH.—Messrs. Balkwill & Co.
  Mr. C. J. Park, Mutley Plain.
PORTSMOUTH.—Mr. T. Brewis, 325, Fratton Rd.

Provinces.—*Continued.*

PRESTON.—Mr. F. A. Williamson, Garstang Rd.
RAWTENSTALL.—Mr. J. E. Lord, Rossendale.
REDHILL.—Mr. W. H. Fowler, 2, Station St.
ROMFORD.—Mr. J. W. Lasham, High St.
ROTHERHAM.—Mr. J. Horsfield, 1, College St.
RYDE.—Mr. H. Pollard, 168, High St.
ST. HELENS, Mr. J. G. Wallbridge, 52, Liverpool Rd.
ST. LEONARD'S-ON-SEA.—Mr. C. R. Stedman.
SCARBOROUGH.—Mr. J. Whitfield, 113, Westboro.
SHEFFIELD.—Mr. H. Antcliffe, West Bar.
  Mr. P. Carr, 85, Ecclesall Rd.
  College of Pharmacy, 116A, The Moor.
  Mr. G. T. W. Newsholme, 27, High St.
  Mr. J. B. Pater, Broomhill.
  Mr. G. Squire, 19, Haymarket.
SHREWSBURY.—Mr. W. G. Cross, 70, Mardol.
SOUTHAMPTON.—Messrs. Randall & Son.
SOUTHPORT.—Mr. Jas. Righton, 293, Lord St.
STAFFORD.—Mr. J. Averill, 10, Market Square.
STOCKPORT.—Mr. W. B. Orton, 67, St. Petersgate.
STOCKTON-ON-TEES.—Messrs. Brayshay & Son.
STOKE-ON-TRENT.—Mr. F. Adams, High St.
SUNDERLAND.—Mr. C. Ranken, Stockton Road.
TODMORDEN.—Mr. H. P. Lovatt, 6, Water Street
TOTTENHAM.—Mr. A. E. Tanner, Tottenham Ter..
TUNBRIDGE WELLS.—Mr. A. E. Hobbs.
ULVERSTON.—Mr. R. Willan, 5, Market St.
WAKEFIELD.—Mr. J. H. Chaplin, 60. Westgate.
WALSALL.—Mr. E. M. Elliott, 42, Park St.
WARRINGTON.—Mr. H. N. Ashton, 63, Sankey St.
  Mr. J. Rymer Young, 40, Sankey St.
WESTON-SUPER-MARE.—Mr. John Cooper.
WIDNES.—Mr. C. J. Bennett. 32, Victoria Rd.
WIGAN.—Mr. J. Phillips, 58, Wallgate.
WINCHESTER.—Mr. A. E. Chaston, High St.
WINDSOR.—Mr. B. Westlake, 91, Peascod St.
WOLVERHAMPTON.—Mr. T. J. Gibson.
WOOLWICH.—Mr. A. J. Wing, 69, Powis St.
WORKINGTON.—Mr. J. R. Mason, 4, Pow St.

Wales.

ABERAVON.—Mr. G. B. Loveluck, High St.
BANGOR.—Mr. Owen Jones, Market Place.
FLINT.—Mr. O. William Jones, Apothecaries' Hall.
HOLYHEAD.—Mr. F. J. Jones, 12, Market Place.
LLANRWST.—Mr. O. I. Jones, Apothecaries' Hall.
MERTHYR.—Mr. E. W. Harris, 128, High St.
SWANSEA.—Mr. N. M. Grose, 8, Temple St.
WREXHAM.—Mr. C. G. Caldecott, Regent St.

Scotland.

ABERDEEN, Mr. John Cruickshank, 42, George St.
ARBROATH.—Mr. A. Naysmith, High St.
DUNDEE.—Mr. C. Kerr, 56, Nethergate.
EDINBURGH.—Mr. J. A. Forret, Brougham Place.
  Mr. C. F. Henry, 1, Brandon Terrace.
FALKIRK.—Mr. W. Forgie, 105, High St.
GLASGOW.—Mr. T. Dunlop, 181, Albert Road.
  Mr. J. A. Russell, 212, New City Rd.
  School of Pharmacy, 180, West Regent St.
  Mr. J. W. Sutherland, 127, Buchanan St.
GREENOCK.—Mr. A. McNaught, 4, W. Blackhall St.
HAWICK.—Mr. W. S. Turnbull, 2, Dovemount Pl.
KIRKCALDY.—Mr. David Storrar, 228, High St.
LEITH.—Mr. J. Bowman, 3, Duke St.
LINLITHGOW.—Mr. A. Spence, 135, High St.
MONTROSE.—Mr. A. Davidson, 172, High St.
PAISLEY.—Mr. A. Fraser, 100, High St.
PETERHEAD.—Mr. J. F. Tocher, 1, Chapel St.
STIRLING.—Mr. John Raffan, 16, Port St.

Ireland.

BELFAST.—Messrs. Grattan & Co., Ltd.
  Mr. J. B. Robinson, Duncairn Medical Hall.
  Mr. J. C. Payne, 13, Shaftesbury Sq.
CORK.—Mr. T. R. Lester, 106, St. Patrick St.
DALKEY.—Mr. G. D. Beggs, Medical Hall.
DUBLIN.—Apothecaries' Hall, 40, Mary St.
  Mr. J. I. Bernard, 26, Clare St.
LIMERICK.—Messrs. John Laird & Co.
LONDONDERRY.—Messrs. Maxwell, Greer & Co
WATERFORD.—Messrs. G. White & Sons.

Pharmaceutical Society of Great Britain . .

OFFICIAL NOTICES.

ANNUAL GENERAL MEETING.

Notice is Hereby Given that, in accordance with the provisions of the Royal Charter of Incorporation, the SIXTY-FIRST ANNUAL GENERAL MEETING of the Members of the Society will take place at 17, Bloomsbury Square, London, W.C., on WEDNESDAY, MAY 28th, 1902, at noon precisely, for the purpose of receiving the Report of the Council, and of electing the Council and Auditors for the ensuing year.

RICHARD BREMRIDGE,
Secretary and Registrar.

SPECIAL GENERAL MEETING.

A Special General Meeting of the Members of the Society will take place at 17, Bloomsbury Square, London, W.C., on WEDNESDAY, MAY 28th, 1902, after the conclusion of the business of the Annual General Meeting, for the purpose of transacting the following business:—

(a) To consider, and if thought proper, to confirm and approve new Bye Laws to be submitted by the Council to the said Meeting in accordance with the provisions of the Royal Charter of Incorporation of the Society, and of the Pharmacy Acts, 1852 to 1898. The new Bye Laws to be submitted to the said Meeting are printed as a special supplement to the PHARMACEUTICAL JOURNAL *of April 12th, 1902.*

(b) To consider, and if thought proper, to adopt the following recommendation of the Council prescribing an addition to Clause 3 of the Poison Regulations passed in accordance with Section I of the Pharmacy Act, 1868:—

> *That the word "and" preceding the word "lotions" be deleted, and that the words "and liquid disinfectants" be added immediately after the word "lotions."*

Clause 3 of the present Poison Regulations is as follows:—

> 3. That in the dispensing and selling of poisons all liniments, embrocations, and lotions containing poison be sent out in bottles rendered distinguishable by touch from ordinary medicine bottles, and that there also be affixed to each such bottle (in addition to the name of the article, and to any particular instructions for its use) a label giving notice that the contents of the bottle are not to be taken internally.

RICHARD BREMRIDGE,
Secretary and Registrar.

NOTES IN PARLIAMENT.

Artificial Manures.—The President of the Board of Agriculture has been asked by Mr. Ffrench whether his attention had been called to the fact that the sellers of artificial manures were enabled to obtain for them much more than their value, owing to the method of stating analysis on trade circulars and price lists; whether he was aware that nitrogen was usually put down as ammonia or sulphate of ammonia, although one part of nitrogen was equal to 1·2 of ammonia or 4·7 of sulphate of ammonia; that potash was frequently stated as sulphate of potash or potash salts, although one part of potash was nearly equal to two of either of the latter; and that phosphates were stated as partly or mostly soluble, or the total phosphates and so many parts soluble, instead of so many parts soluble and so many parts insoluble; and, whether, with a view to prevent purchasers being misled, he would consider the advisability of putting a stop, by legislation or otherwise, to such methods of stating analysis.

Mr. Hanbury Answered that he could not, of course, either confirm or disprove the statement in the first part of the question. In the second and third parts the hon. member no doubt referred not to the invoice but to the advertisement. The practice referred to was, said Mr. Hanbury, less common in England and Scotland than he assumed it to be in Ireland. The vendor of any fertiliser in a quantity not less than half a hundredweight was required to send to the purchaser an invoice stating the name of the article; whether it was an artificially compounded article or not, and what was at least the percentage of nitrogen, soluble and insoluble phosphates, and potash, if any, contained in it. This invoice acted as a warranty. It was considered when the Act was passed that this afforded an adequate protection to the purchaser, and he had, as yet, no sufficient evidence to show that this had not been the case.

Cancer in India.—Answering Mr. Weir in the Commons, Lord George Hamilton has stated that he has no reliable statistics with regard to the prevalence of cancer in India, but he will ascertain from the Government of India whether any information on the subject is available or can be procured.

The Butter Standard.—Mr. Hanbury, replying to Sir E. Strachey in the House of Commons on Monday, said that he was aware of the prejudice done to the makers of genuine butter both in this country and the Colonies by the sale as milk-blended butter of an article artificially loaded with 25 per cent. of water. The recent introduction of an authorised standard of butter, would, it was to be hoped, if standards in such cases were to be of any real value, have the effect of preventing such an article being so sold, but should that not prove to be the case, further steps ought, he thought, to be taken without delay to remedy the injustice done to both British and Colonial farmers.

The Flash Point.—The Home Secretary has been questioned by Sir M. Bhownaggree as to the accident at Hackney Road on April 19 last, by which, owing to the tilting of a lamp and a consequent escape of oil, a fire was caused, and seven persons lost their lives. Mr. Ritchie said that he did not find that the inspector appointed under the Petroleum Act stated that the oil used in this instance was the cause of twenty-six fatal accidents last year. As a matter of fact, in twelve of those cases the flash point of the oil was not known, and in two cases it was over 100 degrees. As regarded the Hackney Road case it was impossible to ascertain the exact cause of the heating of the lamp, but, said Mr. Ritchie, if this was in any way due to the oil it could only have been on account of its sluggish or slow burning nature, and these qualities, he was advised, went rather with a high flash than with a low flash oil.

MARRIAGE.

Hunt—Paterson.—On April 29, at the Wesleyan Chapel, Wellington, Shropshire, by the Rev. E. Devonport, assisted by the Rev. A. J. Norman, Frederick Edward, elder son of Edward J. Hunt, Stoneleigh, to Pattie, youngest daughter of the late Edward Paterson.

SOCIETY AND ASSOCIATION NEWS.

Grimsby and District Chemists' and Druggists' Association.—The following resolution has been adopted by this Association:—"That this Association pledges itself to vote only for candidates who pledge themselves to take action in support of a test-case being taken in favour of the protection of the title of chemist, and that they do all in their power to administer the Pharmacy Act in distinct accordance with that section which states that only those who comply with its regulations shall legally assume the titles therein protected; and that they trust other local associations will help and support them in this action."

Royal Photographic Society.—Mr. W. Smedley Aston will open an exhibition of his photographs at 66, Russell Square, London, W.C., on May 20. Visitors will be admitted on presentation of visiting cards.

SCHOOL AND COLLEGE NEWS.

West of Scotland College of Pharmacy.—On Friday last an enjoyable ramble to the southern outskirts of Glasgow was taken by the students of this College, under the guidance of Mr. T. S. Barrie, the Principal. A large number of specimens were collected and examined by the students, such as tubers of pignut and figwort, rhizomes of windflower and butter burr, runners of wild strawberry and silver weed, buds of sycamore, purple willow and white dead-nettle, and numerous flowers, as those of most of the foregoing, with, in addition, those of Sweet Cicely, gooseberry, wood sorrel, lesser celandine, dandelion, birch, wild cherry, etc. The next excursion will be made to Falls of Clyde (Bonnington Stonebyres) on Victoria Day (May 22), leaving Glasgow Central at 10.15 a.m. Students and others interested in botany and sports are invited to apply to the College for further information.

PERSONALITIES, BUSINESS CHANGES, ETC.

Miss Annie E. Tilson, of Long Sutton, Lincolnshire, has been appointed non-resident dispenser at the Union Infirmary, Bradford, at a salary of £110 per annum.

Mr. R. Westland, chemist and druggist, has purchased the business opened by Mr. F. Wimble a few weeks ago at 3, London Road, Tooting Junction, and is now in possession.

Mr. John Williams, M.P.S., of Criccieth, North Wales, asks us to state that he will be glad if all business houses when addressing communications to him will please insert the word "chemist" in order to ensure such communications being delivered to him.

LATE NEWS.

Medicine Stamp Duty: An Important Point.—We understand that the question as to liability of recommended official preparations to medicine stamp duty will be raised at the Thames Police Court on Friday at 2 p.m., when a summons in connection with the sale of an unstamped bottle of tinct. quin. am., with a recommendation, will be heard.

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

Donald McNish and Charles Maybury, carrying on business under the style or firm of "The Nottingham Chemical Company," Goldsmith Place, Nottingham. Debts will be received and paid by Charles Maybury.

John Forder and Henry Alfred Duff, carrying on business as manufacturing chemists, under the style or firm of Forder, Duff and Co., 79, Abbey Lane, Stratford. Debts will be received and paid by Henry Alfred Duff, and the business will be continued by John Forder, under the style of John Forder and Co.

MARKET REPORT.

London, Thursday, May 8, 1902.

Business in Drugs and Chemicals has again been wretchedly dull during past week—in fact, things might almost be said to be going from bad to worse. Happily, there are no changes of any importance to record in a downward direction, while advances in value, so long as present dull state of affairs continues, can hardly be looked for. Acid Carbolic is rather lower. The speculative market for Quinine has slightly improved. Opium looks like going lower, while Santonine and Cocaine are firm, some people prognosticating an advance in value of both these articles in the near future. Bromides are firm; same may be said of Quicksilver and Mercurials. Glycerin is steady. Cod-liver Oil still quoted at high figures. Iodides quiet. Acid Citric, Tartaric, and Cream of Tartar steady. We give below a few current quotations.

ACETANILIDE—Dull and weak at 8d. to 9d. per lb., according to quantity, including casks, of 1 to 1½ cwt.

ACID BORACIC—Is unchanged at 22s. per cwt. for crystals, and 24s. per cwt. for powder.

ACID CARBOLIC—Is quiet and weak at 6¼d. to 6½d. per lb. for the 34°-35° C. ice crystals in 2½-cwt. drums and over-casks, the other qualities being quoted at proportionate prices.

ACID CITRIC—Fairly steady, and in rather better demand at 1s. 0¼d. to 1s. 0½d. per lb. for crystals in 5-cwt. barrels.

ACID OXALIC—2½d. to 2⅝d. per lb. net free delivery London.

ACID TARTARIC—Steady at 11¼d. to 11½d. per lb. for English on the spot, and 10½d. per lb. for foreign.

ALUM—Quiet at £5 10s. to £5 12s. 6d. per ton for lump, and £6 for ground.

AMMONIA SULPHATE—Firmer at £12 5s. per ton for grey 24 per cent. London spot.

ANTIMONY.—English Regulus is quoted £29 to £30 per ton, and Japan Crude (Black Sulphide) £16 10s. to £17 per ton.

ASHES.—Pots, 25s. 9d.; pearls, 40s.

BENZOLE—Firm at 7½d. to 7¾d. for 50 per cent., and 8½d. to 8¾d. for 90 per cent.

BORAX.—Crystals 13s. per cwt., powder 14s.

BROMIDES—Are firm and unchanged at 1s. 11½d. per lb. for Potassii Bromid, 2s. 2½d. per lb. for Sodii. Bromid, 2s. 3d. per lb. for Ammon. Bromid, and 2s. 2d. to 2s. 4d. per lb., according to quantity, for Bromine.

CAMPHOR.—The market for Crude has been quieter, no business of importance having been done, but prices are rather dearer. For arrival Japan is quoted 140s. to 145s., according to position, and Formosa at 137s. 6d. c f and i. English refiners still quote Bells and Flowers 2s. 3½d. per ton, and Tablets at proportionate prices, according to size.

COCAINE.—Makers are very firm at 17s. 9d. to 18s. 3d. per oz. for the Hydrochlorate, according to quantity in 25 oz. tins.

COCOA BUTTER.—In auction 1,000 cases (100 tons). Cadbury's sold at 1s. to 1s. 0½d., the average being 1s. ⅛d., against 1s. 5-16d. last sale, 1s. 0¼d. in March, 1s. 0⅜d. in February, and 1s. 0⅝d. in January. At the Dutch sales held in Amsterdam on Tuesday Van Houten's realised 67⅝c., against 66·90c. last sale, 64⅛c. in March, 68¾c. in February, and 70⅞c. in January.

CODEINE—Is steady at 11s. 5d. per oz. for the pure Alkaloid, the Salts being quoted at proportionate unchanged prices.

COD LIVER OIL—Is still quoted 105s. to 115s. per barrel for best new non-congealing Norwegian oil in tin-lined barrels of 25 gallons.

COPPER SULPHATE—Quiet at £18 5s. to £19 per ton on the spot.

CREAM OF TARTAR.—First white crystals are still quoted 70s. per cwt. on the spot, powder 72s. 6d., and ditto foreign, 98 per cent., 74s.

ESSENTIAL OILS.—There is little of interest to notice in any article, and business has been quite unimportant. Peppermint: American HGH quoted nominally 8s. 10½d., H&P 8s., JHB first premium 7s. 9d., and JBH pure 7s. 3d. Japan dull and unchanged; in auction 5 cases Kobayashi dementholised were bought in. Star aniseed inactive, nearest value spot 4s. 3d.; to arrive, 4s. 4d. c f and i is the most recent quotation. Cassia in auction was steady, 10 cases 70 to 75 per cent. selling at 2s. 3½d. to 2s. 4d.; for arrival 75 to 80 sold at 2s. 2d. c f and i and sellers. Citronelle quiet, but steady at 10½d. in tins, and 9¾d. in drums. Lemongrass steady spot at 6d.

GLYCERIN.—Refined is steady at 67s. per cwt. for the 1,260 S.G. quality for 5-ton contracts.

IODIDES.—The combined makers still quote Potassii Iodid. 8s. 9d. per lb., Sodii Iodid. 9s. 10d. per lb., Ammon. Bromid. 12s. 6d. per lb., Iodoform, crystals, powder or precipitated, 11s. 8d. per lb.; Iodine Resumblimed, 10s. per lb.; while Commercial Iodine is also unchanged at 6d. per oz.

MENTHOL—Quiet and rather easier at 13s. 3d. per lb. for Kobayashi brand, in case lots, 12 × 5 lb. tins in a case.

MERCURIALS—Are firm at 3s. 0½d. per lb. for Calomel, 2s. 8½d. per lb. for Corrosive Sublimate, 3s. 4½d. per lb. for Red Precipitate, and 3s. 7d. per lb for White Precipitate.

MORPHINE.—Market is quiet and weak at 4s. to 4s. 2d. per oz., according to quantity, for the Hydrochlorate Powder and 2d. per oz. more for the Crystalline Salt.

OILS (FIXED) AND SPIRITS.—Linseed Oil very firm for spot. London spot pipes £31 15s. to £32, barrels £32, month £31 15s., June-Aug. £31 10s., Sept.-Dec. £30 2s. 6d. Hull naked spot £30 15s., June.-Aug. £30 12s. 6d., Sept.-Dec. £29 buyers. Rape Oil steady. Ordinary Brown on the spot barrels £25 10s., May-Aug. £25 10s., Sept.-Dec. £25. English Refined spot £27 5s. Ravison naked spot nominally £24 5s. Cotton Oil firm. London Crude spot £25 5s., May-Aug. £25 10s. Refined spot £27 to £27 10s. Hull naked Refined spot £25 5s., May-Aug. £25 7s. 6d., Nov.-April £22 2s. 6d. Crude spot £24, May-Aug. £24 5s., Nov.-April £21. Olive Oil: Mogador £31 to £32, Spanish £33, Levant £32. Cocoanut Oil quiet for Ceylon, but dearer for Cochin. Ceylon spot £33, April-June £31 c.i.f., May-July £30 15s. c.i.f., Aug.-Sept. £30 12s. 6d. c.i.f. Cochin spot £37, April-May £34 10s. c.i.f., Aug.-Oct. £34 c.i.f. Mauritius £33. Palm Oil very firm and dearer. Lagos on the spot £28 10s. Castor Oil quiet. Belgian:—Firsts, spot, £25; July-Dec., £24 10s.; seconds, spot, £23; July-Dec., £22 15s. Barrels free, ex-wharf, London, 2½ per cent. discount. Hull made, guaranteed pure—Oct.-Dec. deliveries (equal monthly quantities)—Firsts, £24 15s. per ton; seconds, £23 15s. per ton; in barrels, delivered free, ex-wharf, London, less 2½ per cent. discount. Lubricating Oil easier. Pale American has declined 7s. 6d. to 10s. Spot quoted £5 12s. 6d. to £8 10s., Black £5 to £6. Russian Black £5 to £6 10s., pale £7 to £10. Turpentine strong and active. American spot 33s., June-Aug. 32s. 9d. to 32s. 10½d., Sept.-Dec. 32s. 10½d., Jan.-April 33s. 3d. to 33s. 6d. Rosin: Common strained spot 4s. 9d. ex-wharf, June-July and July-Sept. sailer 4s. 3d. ex-ship conditions. Petroleum Oil dull. Russian spot quoted 5⅞d. to 6½d. American spot 6¾d. to 7d., Water White 7¾d. to 8d. Refined Roumanian on spot 5¾d. to 5⅞d. Petroleum Spirit: American ordinary 8d., Deodorised 8¼d.

PARAFFINE WAX.—Crude, 1⅞d. to 2d.; refined, 3d. to 3¾d.

PHENACETIN—Is steady at 4s. 2d. per lb. for 10-cwt. lots up to 4s. 9d. per lb., according to quantity, for both crystals and powder in bulk paper parcels

PITCH—7s.

POTASH CHLORATE.—Crystals or powder 3d. to 3¼d. per lb. net spot London.

QUICKSILVER—Firm at £8 15s. per bottle from the importer, second-hand not offering.

QUININE.—German makers still quote 1s. 3d. per oz. for the Sulphate for 1,000 oz. lots in 100 oz. tins, while in the speculative market there are sellers at 1s. 1½d. per oz. for spot, and buyers at ¼d. per oz. less money, with, however, but very little business passing. The landings during April were 180,000 oz., and the deliveries 20,512 oz., making the stock on April 30, 601,808 oz., against 331,024 in 1901.

SANTONINE.—Market is very firm, and it is thought that an advance in price is by no means improbable. Lowest price is now still 16s. 9d. per lb. nett for 2-cwt. lots taken in one delivery.

SODA NITRATE.—Refined spot £10. per ton, commercial £9 17s. 6d.

SOY.—China remains very quiet, although steady, at 1s. 5d. to 1s. 6d., duty paid.

SULPHONAL—Quiet and unchanged, Bayer's make being still obtainable in limited quantity at 5s. per lb. for both crystals and powder in bulk paper packing.

TAR.—Stockholm, 22s. 6d. Archangel, 17s.

THYMOL—Very quiet at 7s. 6d. to 8s. per lb., according to quantity and make.

VERMILLION—Is cheaper, sellers now asking 3s. for Chinese.

BUY FROM THE DIRECT IMPORTERS

SPONGES
FOR CHEMISTS' TRADE.

I. & M. COHEN
Sponge Merchants, Importers and Exporters,
Contractors to H.M. Government,
35 & 54, HOUNDSDITCH, & 66, ST. MARY AXE
LONDON, E.C.
Every Description always on hand.

MANUALETTES
. . FOR . .
CHEMISTS' ADVERTISING.
(Edited by Mr. A. C. Wootton.)

№ 2,
"The Claims of the Camera"
IS NOW READY.
Sample Copy on receipt of Post Card.

JAMES TOWNSEND & SON,
EXETER: LITTLE QUEEN ST.
LONDON: 2 & 3, STONECUTTER ST., E.C.

EVERYONE
acknowledges that
JEWSBURY & BROWN'S
MINERAL WATERS
ARE UNEXCELLED.
Ardwick Green, Manchester.

Notices to Correspondents.

ALL COMMUNICATIONS FOR THE 'PHARMACEUTICAL JOURNAL' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received as late as Thursday, if specially arranged for. Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17, Bloomsbury Square, London, W.C. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 'Pharmaceutical Journal' Office, 8, Serle Street Lincoln's Inn, London.

CONTRIBUTIONS sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Augustin, Barrie, Bellamy, Black, Broadhead, Coleman, Colley, Corf, Duberley, Fairweather, Ferrall, Gadd. Gamble, Glass, Goldby, Harrison, Hill, Holmes, Houghton, Jones, Judge, Kellett, King, Morrison, O'Halloran, Phillips, Pickering, Poppelreuter, Rodell, Samuel, Sangster, Sherwood, Spurge, Stewart, Thomas, Thorne, Tocher, Wood.

DIARY OF THE WEEK.

Monday, May 12.

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION, Church House, Church Street, at 8.30 p.m.—The Proposed Outing at the Coronation.

Tuesday, May 13.

ROYAL PHOTOGRAPHIC SOCIETY, 66, Russell Square, London, at 8 p.m.—"A New Apochromatic Form of Zeiss Planar Lens," by Fritz Mollmorgen.

Wednesday, May 14.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, London.—Library, Museum, School, and House Committee.

Thursday, May 15.

CHEMICAL SOCIETY, Burlington House, Piccadilly, W., at 8 p.m.—Ordinary Meeting.

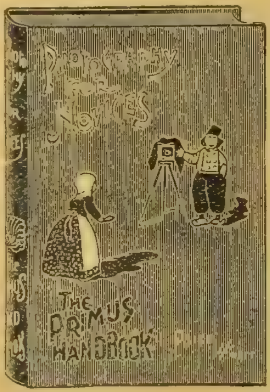
Friday, May 16.

ROYAL INSTITUTION, Albemarle Street, Piccadilly, W., at 9 p.m.—"The Nebular Theory," by Sir Robert Ball.

TRADE NOTES AND NOVELTIES.

THE CLAIMS OF THE CAMERA.—No. 2 of the series of "manualettes" for chemists' advertising, edited by Mr. A. C. Wootton and published by Messrs. James Townsend and Son, Little Queen Street, Exeter, deals with cameras and photographic accessories. As previously announced (see *P.J.* for March 1 last), the special feature about these manualettes is that in every case the text can be exactly what the chemist issuing it would like to say himself, the inside sheets being printed specially for each order, so that "own specialities" can be expressly recommended in the text, and prices quoted as desired. Prices and further particulars may be obtained from Messrs. Townsend and Son on mentioning the *P.J.*

BOOK ON PHOTOGRAPHY FOR NOVICES.—Messrs. W. Butcher and Sons, Camera House, St. Bride Street, London, E.C., are publishing a book entitled 'Photography for Novices,' at the popular price of 1s. The book, which will be on the market next week, is wonderful value for the money, and a very large sale is anticipated, the first edition comprising 30,000 copies. It will be sold to chemists and dealers at a very good profit, and it should fill a gap for a book on photography written without technical terms.



SOLOID MICROSCOPIC STAINS.—The increasing use of the microscope in modern clinical research demands a ready and reliable means of staining pathological specimens, and Messrs. Burroughs, Wellcome and Co. are now supplying suitable stains in the form of compressed tablets, with the object of enabling microscopists to prepare fresh solutions of the necessary dyes in small quantities when required. The tablets are said to be prepared with dyes of exceptional purity, and are claimed to be of high accuracy, while their use obviates the disadvantages associated with stock solutions. Soloid microscopic stains are issued in packages of six, the full list comprising:—Bismarck brown, borax methylene blue, eosin, eosin methylene blue (Louis Jenner), fuchsine, gentian violet, Gram's iodine sol., hæmatoxylin, hæmatoxylin (Delafield), methylene blue, methylene violet, and thionine blue.

PUBLICATIONS RECEIVED.

AGRICULTURAL NEWS: A Fortnightly Review of the Imperial Department of Agriculture for the West Indies. Vol. 1, No. 1. Pp. 16. Price 1d. Barbados: Imperial Department of Agriculture for the West Indies. London: Dulau and Co., 27, Soho Square, W. From the Commissioners.

PHOTOGRAPHY FOR NOVICES.—The Primus Handbook. By PERCY LUND. Pp. 191. Price 1s. net. London: W. Butcher and Sons, Camera House, St. Bride Street, E.C. 1902.

Pharmaceutical Journal

SATURDAY, MAY 17, 1902.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

ASSISTANT wanted; outdoor; good-class Dispensing and Retail; state salary required. — WINSHIP, Chemist, 36, Petergate, York.

WORCESTER.—Required early in June, qualified ASSISTANT, about 23, for good-class Dispensing business; indoor.—THOMAS LUNN, Worcester.

TUNBRIDGE WELLS.—Junior ASSISTANT; indoors.—Apply, stating age, references, and salary required, to DUNKLEY & ROGERS, Chemists, Tunbridge Wells.

DISPENSER for a London Hospital (100 beds) wanted.—Qualifications, with copies of recent testimonials, by letter, to B. B. B., c/o Street's, 8, Serle St., W.C.

SUSSEX COUNTY HOSPITAL, BRIGHTON.—Wanted, an Assistant DISPENSER; Minor qualification; male; hours 9.30 to 4; dinner provided; salary £80 per annum.—Particulars to E. FENNER, Dispenser.

AN experienced ASSISTANT in a first-class establishment, for Dispensing department; qualification essential; must be expert and reliable.—W., Hodgkinsons, Clarke & Ward, 101, Whitecross Street, London, E.C.

WANTED, qualified ASSISTANT (outdoor), for Dispensing and light Retail business.—Apply, with full particulars, and enclose photo if convenient, to LONG & STRICKLAND, Pharmaceutical Chemists, Bognor-on-Sea.

KESWICK.—Wanted, Junior ASSISTANT, outdoors, for good-class Retail and Dispensing business; knowledge of Photography preferred.—State age, salary, and usual particulars, with photo, TOWNLEY, Pharmacist, Keswick.

WANTED, for the end of second week in June, a qualified ASSISTANT, about 25 or 26, accustomed to first-class pharmacy; must be a neat and accurate Dispenser and a good Counterman.—J. BLETSOE, Chemist, Richmond, Surrey.

WANTED, qualified JUNIOR, for a first-class Dispensing business; outdoor; salary to commence, £100 per annum; hours 9 to 7, duties one evening weekly, one Sunday in five.—YORKS, Pharm. Journal Office, 8, Serle St., W.C.

EASTBOURNE.—Wanted, experienced ASSISTANT, accustomed to good-class trade, and a neat Dispenser; one with some knowledge of Photo business preferred.—State salary required and usual particulars to J. F. ANDREWS, Eastbourne. Also a JUNIOR or IMPROVER.

Assistants Wanted—Continued

LONDON, S.W.—Wanted, about the end of the month, qualified ASSISTANT (indoor), mostly for the Dispensing counter; must be quick and accurate Dispenser.—Apply, giving full particulars and salary required, and enclose photo, to FRANCIS WILDE, 100, Brompton Rd., S.W.

CAPE COLONY.—Wanted, qualified ASSISTANT, of good experience and having undeniable references; aged about 23; salary, 1st year, £12 per month; 2nd year, £13 per month; 3rd year, £14 per month; sleeping accommodation provided; second-class passage paid out; 3 years' agreement.—Apply, COLONY, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

INDIA (N.W. Province).—Wanted, a good ASSISTANT, well up in all branches of a Chemist's business; Minor qualification. Salary, 1st year 200 rupees per month, 2nd year 225 rupees per month, 3rd year 250 rupees per month; free furnished apartments; second-class passage paid out; required to start as quickly as possible; candidates must hold undeniable references.—Address, INDIA, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CALCUTTA.—Wanted at once, a qualified ASSISTANT; age about 24 years; must be able to conduct analysis; first-class opening for a competent man. Salary, 1st year, 275 Rs. per month; 2nd year, 300 Rs. per month; 3rd year, 325 Rs. per month, and 4th year, 350 Rs. To a candidate of exceptional experience the salary will be increased. 4 years' agreement. Second class passage paid both ways.—Apply by letter to CALCUTTA, c/o Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CAPE COLONY.—Wanted, good ASSISTANT, of gentlemanly address, well up in Dispensing, energetic, able to take charge of branch, understands book-keeping, and able to make out accounts; age about 23; Minor qualification; salary, first year, £150; second year, £160; third year, £170; lodging found; second class passage paid out; three years' agreement; required to start at once; candidates must hold undeniable references.—Address, CAPE, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified ASSISTANT; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second-class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to STRAITS SETTLEMENTS, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

A Copy of this Inset is inserted in every *Pharmaceutical Journal* issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at the Publishing Office, 8, Serle St., London, W.C., and at more than two hundred addresses in the United Kingdom; a list of these addresses was published last week.

Assistants Wanted—Continued

CAPE TOWN.—Qualified ASSISTANT wanted; salary, £12 per month first year, £13 10s. second year, and £15 third year; room supplied, but not board; second-class passage paid; three years' agreement; small commission on returns paid to a good man.—Apply, stating experience, to P. J. P. & Co., c/o John Murdoch & Co., 52, Leadenhall St., E.C.

SANITARY INSPECTORSHIPS.—Salaries £100 to £250. Numerous vacancies. Permanent appointments. Chemists or Assistants desiring change of occupation should qualify as Sanitary Inspectors. Special Postal Course of Lessons now commencing for London, Liverpool, Cardiff, Manchester, Leicester and Newcastle-on-Tyne exams. Anyone of average ability can pass. Had over 250 successful candidates, and fully half had no previous knowledge of sanitary matters.—Apply, ROBERT H. MUSHENS, Sanitary Science Teacher, Sunderland.

SOUTH DEVON & EAST CORNWALL HOSPITAL, PLYMOUTH.

WANTED, a qualified DISPENSER, a portion of whose time will be occupied in the duties of Investigating Officer.

Salary £120 per annum.

Further particulars may be obtained from the Assistant Secretary at the Hospital, to whom applications, stating age, and accompanied by copies of recent testimonials, should be forwarded by the 27th instant.

HEMSLEY H. SHANKS, R.N.,
Hon. Secretary.

Plymouth, May 12, 1902.

SOUTH AFRICA (healthy coast town).—At once, two ASSISTANTS required, one for the Wholesale and the other for the Retail. Must be thoroughly reliable, competent, steady, and of sober habits; latter most essential. Scotchmen preferred; aged from 21 to 25; Minor qualification. For the Wholesale, the Assistant must have had previous experience. For the Retail, the Assistant must have had first-class Dispensing and Retail experience. Salary, 1st year, £13 10s. per month; 2nd year, £14 10s.; 3rd year, £15 10s.; without board and outdoor (sleeping accommodation provided, conditionally, for Retail Assistant). Second-class passage paid out, and allowance on board. Three years' agreement. Address, SOUTH AFRICA, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

PRESCOT UNION.

NON-RESIDENT DISPENSER.

(Amended Advertisement.)

THE Guardians of this Union require the services of a DISPENSER (Male or Female) at the Workhouse, Whiston. Salary £80 per annum. Hours of duty 9 to 6. (Saturdays 9 to 1.)

The person appointed must be a licentiate of the Apothecaries' Company of London, or have been duly registered under the Pharmacy Act, 1868, or some other authority of law in that behalf, and will be required to do clerical work in connection with the Hospital Administration under the direction of the Medical Officer.

Applications, stating age, qualifications, and experience, accompanied by copies of three testimonials of recent date, to be sent so as to reach me not later than 10 a.m. on Tuesday, the 20th inst.

The appointment will be subject to the approval of the Local Government Board and to the provisions of the Poor Law Officers Superannuation Act, 1896.

A. F. MANN,
Clerk.

Union Offices, Whiston,
Prescot, May 12th, 1902.

A Copy of this Inset will be forwarded gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at more than two hundred addresses in the United Kingdom; a list of these appeared in last week's issue.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM; qualified; abstainer.—E. KEMP, 11, Cheapside, St. Leonards-on-Sea.

LOCUM; qualified; 26; engagements booked.—WRIGHT, Chapel St., Leigh, Lancs.

MAJOR qualification; requires position in the Wholesale.—COLLIS, Ellesmere, Salop.

TEMPORARY or otherwise; abstainer; good reference.—PHARMACIST, 107A, Aslett St., S.W.

LOCUM TENENS or MANAGER; experienced.—Apply, M.P.S., 8, Serle St., London, W.C.

ASSISTANT; unqualified; tall; 22; in good-class business —R. S., 1, Claremont Rd., Surbiton, S.W.

QUALIFIED; 25; disengaged June 1st; provinces.—MCGHIE, 31, Devonshire Rd., Birkenhead.

AS LOCUM; experienced, qualified Assistant, disengaged until June 24th.—TRACY, Chemist, Dorking.

LOCUM; qualified; 25; disengaged; good experience.—SEXTUS, 30, Keildon Rd., Clapham Junction, S.W.

MANAGER or otherwise; qualified; Extractor, Prescriber; 26; unmarried.—QUININE, 29, Oakfield Rd., Liverpool.

MAJOR desires Summer engagement; experienced in Dispensing, Photography.—PHARMACEUTICAL, 6, Newbro', Scarborough.

LOCUM; 31; qualified; thoroughly experienced; disengaged 26th inst.—CHEMIST, Central Pharmacy, 6, Montague St., Worthing.

LADY (Minor qualification) seeks appointment as DISPENSER in Hospital or Pharmacy.—DISPENSER, Pharm. Journal, 8, Serle St., W.C.

QUALIFIED; 27; SENIOR or MANAGER; exceptional first-class experience.—Apply, METOL, Pharm. Journal Office, 8, Serle St., W.C.

QUALIFIED; 25; ten years' good Dispensing experience; knowledge Photographic trade.—E. TRISTRAM, Victoria Rd. Pharmacy, Romford.

ASSISTANT; experienced, reliable; able take charge; Gloucestershire preferred, and outdoors; good Prescriber and Extractor; salary moderate; soon disengaged.—CHEMICUS, 1, Grove Terrace, Truro.

LOCUM, BRANCH MANAGER or SENIOR; qualified; 37; store experience and West-end; Extractor, Prescriber, and knowledge of Photography; excellent references; disengaged.—STATIM, 140, Kennington Park Rd.

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows:—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

BLACKPOOL.—Chemist and Photographic STOCK and FIXTURES to be Disposed of, proprietor having Medical Army Appointment; shop can be had; low rental.—CROSHER, 1, Kensington Buildings, South Shore, Blackpool.

HARROGATE.—Dispensing BUSINESS for Disposal. Upwards of 5,000 prescriptions; returns exceed £1,200; centre of town; well-stocked shop; several good paying specialities. Particulars to *bonâ fide* applicants.—X.Y.Z., 5, Dragon Parade, Harrogate.

Businesses for Disposal—Continued

MID-WALES.—Good general country family and agricultural BUSINESS; good weekly markets; absolutely cash; turnover between £800 and £900, capable of extensive increase; opening for Dentistry and wine and spirit licence; good useful stock, £550.—WALES, Pharm. Journal Office, 8, Serle St., London, W.C.

LIVERPOOL.—An old-established Retail and Dispensing BUSINESS for Sale; the proprietor having another business is unable to attend to both; personal attention would increase the business considerably; part purchase money could remain if necessary; no agents.—Apply, GENTIAN, Pharm. Journal Office, 8, Serle St., W.C.

PRESTON, LANCS.—Old-established corner SHOP; good thoroughfare in populous working-class district; good house, 6 rooms beside shop, separate entrance; good opening for Prescribing, Extracting and Photography; returns £7 under management; price, valuation, about £150; rent £20.—Apply, CORTEX, Evans, Sons & Co., Liverpool.

LONDON, S.W. (10 miles out).—High-class suburb; light Retail and Dispensing BUSINESS, returning between £40 and £50 weekly, at good prices; solely under management; price £1,550, or small premium and valuation of stock and fixtures; an opportunity very seldom offering; most satisfactory reasons for selling; books kept by accountant.—SALOPHEN, Pharm. Journal Office, 8, Serle St., W.C.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Platinum; disused utensils and scraps.—P. Rowsell, 9, Derwent Grove, Dulwich.

One dozen 35 oz. pale blue Syrup Bottles.—Holding, Chemist, Barnsbury, N.

Pereira's Materia Medica, 4th edition, in three volumes; state condition and lowest price.—H. J., Pharm. Journal Office, 8, Serle St., London, W.C.

OFFERED.

Heather Honey, superior flavour, 8d. lb. Sample 2d.—Hill, Falmouth Rd., Sheffield.

12 doz. bone-handled table knives, 96s.; in dozen lots, 8s. 3d.; money returned if not approved.—E. L. Wing, 9, Ranby Rd., Sheffield.

Box Weights, ·02 to 100 grammes; Remsen's Organic; Knight's Materia Medica; Stirling's Materia Medica, Doses, Latin Volumetric; Will's Volumetric; Jago's Chemistry.—Tracy, Chemist, Dorking.

Croquet Set.—For disposal, very cheap, splendid set of County Club Croquet, consisting of 4 superior boxwood mallets, with large heads, 4 boxwood balls, painted regulation colours, set of stout narrow hoops, clips, drill, etc., in nice case complete; unused and perfect; only £1 14s. 6d.; worth £2 15s.; approval before payment.—Mr. P. Ralph, Cambridge House, Lakenheath, Suffolk.

Fish Knives and Forks.—Six pairs very handsome, best silver-plated fish knives and forks, with beautiful sterling hall-marked silver handles, by Mappin, in elegant case, only £2; worth £4. Also pair of silver-plated fish servers to match, only 18s. 6d.; worth 38s. Both new. Presents. Approval before payment willingly.—Mr. Ralph, Cambridge House, Lakenheath, Suffolk.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., CHEMISTS' TRANSFER AGENTS, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

The Business conducted by MESSRS. ORRIDGE & Co., has been known as a Transfer Agency in the advertising columns of the PHARMACEUTICAL JOURNAL since the year 1846, and is well known to all the leading firms in the Trade.

VENDORS have the advantage of Messrs. O. and Co.'s direct attention and advice as to value without any additional fees.

PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

Terms for Valuation on application.

THOMAS TOMLINSON & SON

Chemists' Transfer Agents and Valuers,

9, NEW CANNON STREET, MANCHESTER.

VENDORS saved time and trouble by consulting before offering for sale PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address*, "TOMTOM."

Messrs. BERDOE & CO.

Expert Stock=takers & Valuers

Stock-taking is a necessity, and we undertake the work at the smallest possible cost, and guarantee not to upset the routine of business in the slightest degree. Terms on application. Businesses sold, valued and investigated. Note the address:—

35, JEWRY STREET, FENCHURCH ST., CITY

CHEMISTS WHO WISH
to make Up-to-date Improvements, Alterations, &c., would do well to consult

H. MILLS, Shopfitter, Shop Front Builder, &c.
WORKS: 63-165, OLD STREET, LONDON, E.C.

CHEAP HOUSE for Window Enclosures, Drug Fixtures, Wall Cases, Dispensing Screens, Glass Facias, Stall Plates, &c.
Chemists fitted complete. Estimates Free.

Shop to Let

BECKENHAM.—In main road, splendid position; first-class Shop to Let, with good residence; rent £50 only; exceptional opportunity for opening new business or branch; immense neighbourhood, rapidly developing; special plate-glass shop-front would be fitted; can be viewed at any time.—Apply, T. W. JONES, Crescent Works, Beckenham.

A Copy of this Inset will be forwarded gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at more than two hundred addresses in the United Kingdom; a list of these appeared in last week's issue.

RECOGNITION OF SPECIMENS.

The following notes on the examination and recognition of pharmaceutical specimens have been contributed to the *Alumni Report,* published by the Alumni Association of the Philadelphia College of Pharmacy, by Messrs. E. F. Cook and C. H. LaWall :—

The recognition of specimens as a test of an applicant's fitness for graduation or registration has long been a factor in college- and State-board examinations, and, at the present time, it may be considered to have attained the importance of a separate branch of study.

Indeed, three separate branches of study are included in this subject, as the specimens under the three general heads of pharmacy, chemistry, and materia medica do not admit of a comparison; and it is only by comparative methods of study, *i.e.,* by proving resemblances and drawing distinctions, that a comprehensive knowledge of any subject may be obtained.

The recognition of specimens in chemistry and materia medica is, comparatively speaking, easy of accomplishment, as contrasted with the differentiation of the various fluid and solid galenical preparations, so numerous and so confusing, because of the composite nature of many of them.

In materia medica and in chemistry specimens it is possible in most cases to recognise and identify a given specimen from the written description which accompanies the definition in the Pharmacopœia or Dispensatory, but no such description of physical characteristics is found when we come to pharmacy specimens, and the student is, consequently, compelled to rely upon his knowledge of the preparation gained by practical experience in its manufacture or handling.

Each drug has a definite structure, which can be described in appropriate terms, and there are few chemicals which do not possess a definite crystalline form; but there are few galenical preparations which possess any tangible properties serving for descriptive purposes which would not apply with equal force to numerous other preparations. Therefore, this class of specimens must be recognised almost entirely by knowledge born of practical experience.

While this is true in most cases, it often occurs that a preparation which may be familiar in its physical properties cannot be identified and named, because of a lack of experience in grouping such preparations as have similar physical properties, and, not infrequently, failure is due to inability, probably but for the moment, to associate the name with the familiar characteristics of the preparation.

The authors of this paper realise that no effort has heretofore been made to systematically group these preparations for this purpose of study, and it is the purpose of the present article simply to enumerate the methods by which such a classification can be effected, and to submit such a classification as will tend to simplify the subject as much as is possible.

The following suggestions are offered for determining the identity of an unknown pharmaceutical specimen, the method of procedure including the systematic use of all perceptive faculties, with due regard for the possibility of injury from specimens possessing irritating properties, or the blunting of the senses from the same cause.

It is clearly evident that proficiency cannot be attained in this branch of study by the use of theory alone, but it will be found that a judicious combination of theory with practice will often prove of great benefit.

The practical value of such methodical study will be shown by the aid it gives to the student who knows the characteristics of the majority of the pharmacopœial preparations; but who often fails, as has repeatedly been observed, to connect the characteristics of the specimen under examination with the correct name of the preparation.

Let us suppose that a student has been given a number of pharmaceutical specimens for identification; the first step is the critical examination of the appearance of each, noting the colour and the condition of fluidity, or body, as it is often called, whereby it may be placed in one of several groups.

The "limpid" liquids may be waters, solutions (with one or two exceptions), spirits, vinegars, wines, or tinctures; while those possessing viscidity to a greater or less degree may belong to the syrups, glycerites, liniments, collodions or oils.

The fluid extracts possess peculiar properties, that usually enable one to recognise a member of the group by appearance alone, although in most instances identification of the individual preparation is attended by great difficulty, and they are not included in the scheme of classification, but will be considered separately.

These primary groups may be further subdivided by noting such characteristics as are indicated by the sense of touch, which will enable one to recognise an oil or a collodion or an alkaline solution; at the same time volatility may be noted, as this is also an important indication, and may be ascertained by observing the rapidity of evaporation of a small quantity.

Frequently these points alone will furnish the necessary clue to identification, especially if the student has been accustomed to systematising or grouping his facts.

If yet unrecognised, after having been examined by these less easily blunted senses, the next step may be taken, namely, the observation of the odour.

Much greater care must be exercised during this examination' since a single specimen possessing irritating properties may completely incapacitate the student for further work in this respect, or a strongly odorous compound may produce the effect of making all subsequent specimens possess a similar odour.

The information obtained by the foregoing method of procedure will frequently permit one to reduce the number of possible preparations to two or three.

If yet uncertain of the identity of the specimen, we may now add to our list of observed characteristics by cautious tasting.

This final test, though often disgusting or nauseating, and purposely reserved until last, frequently supplies the missing link in a chain of evidence, and affords the last item of proof necessary for complete identification.

The accompanying scheme of classification contains all the members of the following groups :—Waters, solutions, honeys, syrups, mucilages, emulsions, mixtures, glycerites, spirits, elixirs, collodions, liniments, oleates, infusions, decoctions, tinctures, wines, vinegars, powders, triturations, masses, confections, cerates, and ointments.

Several classes of preparations have been omitted, either on account of the infrequency with which they occur in such examinations, or because they did not admit of classification in such a scheme which is primarily designed as a practical aid to the student who is taking an examination in pharmacy. These are as follows :—

Fluid extracts, oleoresins, extracts, resins, pills, troches, plasters, papers, scaled salts, and suppositories.

Of the fluid extracts it may be mentioned that a member of this class of preparations usually possesses certain indefinable characters which are associated with the concentration of drug-strength, which is characteristic of the class.

Certain members may be recognised on account of the possession of the characteristic odour or taste of the drug. Among these may be mentioned the following :—

Aromatic fluid extract, fluid extract of cubeb, fluid extract of capsicum, fluid extract of calamus, etc.

(To be concluded.)

SOCIETY AND ASSOCIATION NEWS.

Bradford and District Chemists' Association.—At a meeting held on Tuesday, May 13, it was decided unanimously to support all the retiring members who are offering themselves for re-election on the Council of the Pharmaceutical Society.

Royal Society.—The following fifteen candidates have been selected by the Council to be recommended for election into the Royal Society:—Mr. H. Brereton Baker, Prof. Henry T. Bovey, Prof. Rubert Boyce, Mr. John Brown, Mr. William Bate Hardy, Mr. Alfred Harker, Mr. Sidney S. Hough, Mr. Robert Kidston, Mr. Thomas Mather, Mr. John Henry Michell, Mr. Hugh Frank Newall, Prof. William M. Flinders Petrie, Mr. William Jackson Pope, Mr. Edward Saunders, and Dr. Arthur Willey.

Three Towns Junior Chemists' Association.—A smoking concert was held at Farley's Hotel, Plymouth, on Wednesday, May 7. Mr. E. J. Groombridge presided, and several members of the Senior Section, including the President, Mr. C. T. Weary, were present. An excellent programme had been prepared, among those contributing being Messrs. Weary, Cocks, Downing, Spear, Groombridge, Richards, and Lacey. The programme had been arranged by Mr. E. Lovatt, the Hon. Secretary, Mr. Lamble acting as accompanist.

Aberdeen Pharmaceutical Association.—The annual competition for the two scholarships offered by the Aberdeen Pharmaceutical Association to the students attending the evening pharmacy classes at Gordon's College was held on the 2nd and 3rd inst. The scholarships consist of a free term at the day school of pharmacy. Mr. Tocher, F.I.C., Peterhead, set and examined the papers, and has now intimated his decision to be as follows, viz.:—(1) Mr. John Rioch, care of Mr. Wm. Wallace, chemist, King Street; (2) Mr. Adam Findlay, care of Mr. A. L. Bruce, chemist, Crown Street. There were over thirty students attending the evening classes, eight of whom entered for the competition.

North-East Lancashire Chemists' Association.—A special general meeting was held on May 13 at the White Bull Hotel, Blackburn, to consider the approaching Council election. Mr. Councillor Critchley presided.—On the proposition of Mr. W. Holt, seconded by Mr. G. B. Pickworth, it was resolved "That in view of the reiterated expression of this Association that practising under trade names simply is not in accordance with the 17th Section of the Pharmacy Act, 1868, and as we cannot expect them to forget their private interests when the interests of the general body are at issue, we recommend our members to strike out the names of Messrs. Carteighe, Glyn-Jones, and Southall."—Mr. Pickup proposed, Mr. Holt seconded, and it was carried, "That this meeting requests the Committee to consider the advisability of sending to the Council of the Pharmaceutical Society a petition asking them, in view of recent legal decisions, to take a test case *re* the use of titles by companies."—A third resolution was passed expressing satisfaction at the manner in which Mr. R. Lord Gifford had endeavoured to carry out the views of the Association as a member of the Council of the Pharmaceutical Society.

Lincoln and District Chemist's Association.—At a recent meeting of this Association it was resolved to bring to the notice of the local school authorities certain particulars regarding the registration of pharmaceutical students. In a circular which has been prepared with that object in view, it is pointed out that the Pharmaceutical Society, which by Royal Charter is the governing body in pharmacy, requires a candidate, before presenting himself for the qualifying examination, to produce a certificate of having passed an approved preliminary examination. This certificate must include English grammar and composition, Latin, a modern foreign language, arithmetic, algebra, and Euclid. The point which the Association brings under notice is that boys educated in Lincoln, even if they have obtained a certificate whilst at school, do not pass in all the subjects required. The consequence is that, if apprenticed to a chemist, a boy has to undergo further examination, learning the subjects previously omitted from his school course. This is a great drawback, since an apprentice finds it irksome to take an examination which should have been passed at school and to work for it after business hours. Further, it delays his attendance for a considerable time at classes in botany, chemistry, etc. Chemists also find a difficulty in obtaining suitable apprentices, as when the parent or guardian finds the school work has to be gone over again he looks out for some other calling for his boy. This results in a youth of a lower educational standard coming in, who has not the ability to take the examination, and remains an unqualified assistant, to the detriment of pharmacy, since the qualifying examinations of the Pharmaceutical Society are now very thorough, and no one who has not had a good education need hope to be successful. In bringing the foregoing facts to the notice of the school authorities, the members of the Association hope that they may see their way to including in their curriculum all the necessary subjects, so that scholars who wish to become qualified as chemists may have the necessary knowledge on leaving school to enable them to gain the certificate required by the Pharmaceutical Society.

SCHOOL AND COLLEGE NEWS.

School of Pharmacy.—On Wednesday afternoon last a party of the students went down to Battersea to go over the works of Price's Patent Candle Company, Ltd., which the company had kindly given them permission to do. The first department visited was that in which the wooden boxes are made. The wood, after being cut by circular saws into pieces of the required size, is passed on to a machine which nails the pieces together, and produces a box in very few seconds. Next the huge stock of crude paraffin wax was seen, and the process of its purification followed until the last stage was reached in a storehouse, which contained thousands of 40lb. blocks of a wax which differs little, if at all, from the paraffinum durum of pharmacy. This wax is used in the manufacture of the higher grades of candles, which were seen in all stages of manufacture. Perhaps the portion of the works in which the students took the most interest was that in which the milled toilet soaps are made and stamped into tablets. The manufacture of hard soap was seen, and the plant for the concentration of glycerin. The making of wicks for night-lights, by machines which bore a strong resemblance to model rope-making machines, was watched with much interest. It was noticed that the power for working most of the machinery was supplied by some fine engines by Marshall's, of Gainsborough. The printing, night-light, and cardboard-box making departments, and the chemical laboratory, all received due attention, and then it only remained to thank the courteous officials of Messrs. Price who had conducted the "Square" men in their tour round the works, and helped to make their afternoon a pleasant and instructive one.

COMPANY INTELLIGENCE.

Southall Bros. and Barclay, Limited.—The new issue of preference shares of this company has been subscribed twice over.

E. P. Guest, Limited.—This company was registered on April 16, with a capital of £500 in £1 shares, to carry on the business of pharmaceutical chemists and druggists, dealers in photographic materials, patent and veterinary medicines, paints, oils, varnishes, and decorators' materials, or any other business which can be carried on in connection with the above. No initial public issue. Registered office: High Street, Brentwood, Essex.

Garretts, Limited.—This company was registered on May 3, with a capital of £1,500 in £1 shares, to acquire the business of a chemist, druggist, and optician, oil and colour merchant, etc., as now and hitherto carried on at 33, Commercial Street, Newport, Monmouthshire, as Garrett Brothers; to adopt an agreement with S. Dean and twelve others; to develop and extend the same, and to carry on business as manufacturers of and dealers in all kinds of salts, acids, alkalis, drugs, medicaments, herbs, pharmaceutical, chemical, and surgical appliances and materials, patent and proprietary articles, etc. No initial public issue.

PERSONALITIES, BUSINESS CHANGES, ETC.

Professor Rudolph Virchow has now recovered from the serious accident he met with some months ago.

Mr. A. D. Hall, Principal of the Agricultural College, Wye, has been appointed to succeed the late Sir Henry Gilbert as director of the Rothamsted Experimental Station.

Professor Rudolf Albert von Kolliker has this year been awarded the gold medal of the Linnean Society of London in recognition of his distinguished contributions to zoological science.

Mr. E. Pope Skinner, who has been carrying on a chemist's business at Malmesbury, has vacated that place, and has taken over the management of Messrs. Lennon, Limited, Gardens Branch.

Mr. H. R. Maynard, chemist and druggist, of Horncastle, has recently opened a branch at Woodhall Spa, the fittings, etc., of the pharmacy being supplied by Messrs. Ayrton and Saunders, Liverpool.

Mr. Frank Lonsdale, who has for many years been manager at the Cape Town Gardens Branch of Messrs. Lennon, Limited, has severed connections with that firm after a service of fifteen years with them.

Mr. H. Edward Ellis, M.P.S., F.C.S., has taken over the old-established drug department of Mr. Charles Humphrey's business at Llanfair, near Welshpool, and is carrying on the business at Market Square.

Mr. Elgar, who was for some time Secretary to the Pharmaceutical Society of Cape Colony, has entered into partnership with Mr. Martin, representative in South Africa of Messrs. Frederick Stearns and Co., U.S.A.

Mr. S. C. Sivertsen, chemist, of Observatory, Cape Town, is building new and more commodious premises at that suburb, and has taken over the business at Mowbray lately carried on by Messrs. Godfrey and Co.

Wor. Bro. Edmund Jones, Hanley, P.M. 418, P.P.G. Steward, was appointed by Lord Dartmouth to the office of Prov. Grand Pursuivant, at the Provincial Grand Lodge of Staffordshire Freemasons, held at Wolverhampton on May 10.

Mr. W. Duff, President of the Public Dispensers' Association, on Wednesday, May 14, attended a meeting of the Dispensers' Committee of the Pharmaceutical Society as the representative of the Association, and stated the views of the Association in regard to dispensing in public institutions.

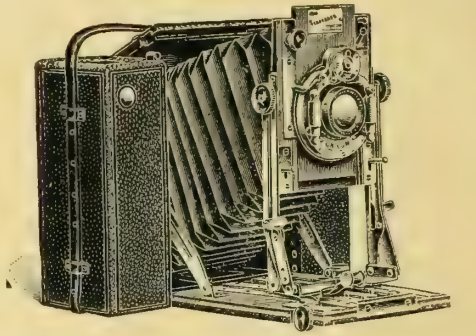
TRADE NOTES AND NOVELTIES.

Kino Tabloids.—Kino is well known to be an astringent of considerable service in the treatment of certain forms of diarrhœa and dysentery, and Messrs. Burroughs, Wellcome and Co. are now offering tabloids of compound kino powder, gr. 5, which, it is believed, will be found to retain in a marked degree all the properties of freshly-prepared compound kino powder, and be a most convenient preparation to employ.

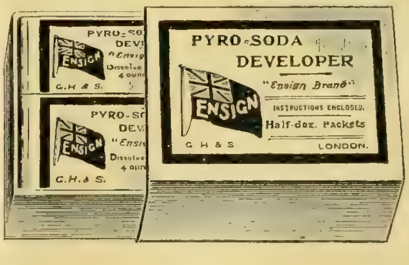
Catalogues of Druggists' Sundries.—Messrs. Ayrton and Saunders, Hanover Street, Liverpool, send copies of their "Royal Scarlet" catalogues of druggists' sundries, etc. This year a departure has been made in issuing two volumes instead of one, the idea being that the illustrated catalogue—which, by the way, contains nearly three thousand illustrations—may be shown to the chemists' retail customers, while the prices and other particulars are given in the letterpress catalogue, which is one of the most comprehensive catalogues of its kind published. We are informed that these catalogues are not sent out by post to the whole trade, but that copies are sent out with each order received.

The Punctumeter.—Messrs. J. Raphael and Co., 51, Clerkenwell Road, London, E.C., have placed upon the market a new optical instrument called the Punctumeter, with which the punctum remotum (far point of distinct vision) and the punctum proximum (near point of distinct vision) are quickly found. If an eye has two puncta remota (astigmatism) it locates each of them and the meridians in which they lie. Myopia, hypermetropia, astigmatism, and the total range of accommodation can all be quickly and accurately measured. It is also a superior spherical lens measure. In addition, it practically tells us the age of the patient and the glasses required for close work, reading, etc. It can be readily seen, therefore, that the punctumeter is a very useful and valuable instrument. It consists of a tube ten centimetres long, into one end of which is inserted a plus lens. Two cells for holding trial lenses are attached to the other end of the tube, one of them being graduated, enabling the operator to place the axis of cylindrical lenses in the proper meridians. A square, graduated bar upon which is mounted a sliding target operated by a rack and pinion is attached to the end of the tube carrying the lens. This bar also carries a supplementary slide which can be fixed at any point on the bar by a set screw.

"Roll Film" Sanderson Hand Camera.—Messrs. Geo. Houghton and Son, 88 and 89, High Holborn, W.C., owing to the demand for a camera with the "Sanderson" movements, using roll films and capable of being loaded and unloaded in daylight, have introduced the "Roll Film" Sanderson Hand Camera. This camera possesses all the advantage of the well-known Sanderson Patent Front and the Sanderson Regular Model Hand Camera, but is specially constructed to take daylight loading roll films. It is fitted with two brilliant view finders, for upright and oblong pictures, and a patented arrangement which very much facilitates the insertion and removal of the spool. A plate adapter can be supplied taking the slides ordinarily supplied with the "Sanderson" hand camera.



The "Ensign" Developers, Etc.—Messrs. Geo. Houghton and Son, 88 and 89, High Holborn, W.C., send a sample 1s. set of developing, toning and fixing chemicals, containing one cartridge metol-quinone developer, one cartridge toning and fixing, and one packet acid hypo fixing. Boxes containing six "Ensign" developing cartridges may also be had, including the following:—Metol-quinol, pyro-soda, hydroquinone, eikonogen - quinol, toning, toning and fixing, at 1s. 6d. and 1s. 9d. per box. The chemicals in the cartridges are separated by using two hermetically-sealed glass tubes, one enclosed inside the other, thus ensuring their keeping for practically an indefinite period. Boxes containing six "Ensign" developing packets, each packet making 4 ozs. of solution, are also supplied to retail at 1s. per box. The illustration shows the style of get-up of the packets. "Ensign" Roll Films (Austin-Edwards Double Instantaneous emulsion) may also be obtained of Messrs. Houghton and Son, full directions for use being given with each roll. Further particulars concerning the "Ensign" specialities will be sent by the firm to any applicant on mentioning the *P.J.*



MARKET REPORT.

London, Thursday, May 15, 1902.

Business in Drugs and Chemicals and, in fact, generally, has again been exceedingly dull during past week, while the near approach of the Whitsuntide Holidays, followed then by the Coronation festivities, after which the summer holidays will soon be in full swing, appears to preclude the possibility, or at least the probability, of any real revival of business activity until the autumn, when, with peace declared in South Africa, it may at least be hoped that we shall see a somewhat different state of affairs. There are no changes in value of any importance to record, with the exception of a further reduction in price of Codeine; otherwise, prices remain about as reported last week.

CINCHONA BARK.—The shipments at Java during the first half of the month were 465,000 Amsterdam lb., against 228,000 Amsterdam lb. last year, and 481,000 Amsterdam lb. in 1900.

CODEINE.—Makers reduced price 10d. per oz., and now quote the pure Alkaloid 10s. 10d. per oz., the Phosphate Salt 8s. 8d., and the Muriate and Sulphate Salts 9s. 7d. per oz.

QUININE.—Business in this article continues suspended, awaiting the Dutch Bark sales to-morrow, but prices remain steady.

THURSDAY'S DRUG SALES.

To-day's Drug auctions comprised fifteen catalogues, some of which were decidedly lengthy. On the whole, the sales passed off extremely quiet. Buchu Leaves were in limited supply, and sold at better prices, otherwise there is nothing special to record. We give particulars below.

ACONITE ROOT.—10 bags Japan were taken out at 40s. per cwt.

ALBUMEN.—10 cases were taken out at 1s. 1d. per lb.

ALOES.—59 boxes mixed Curaçoa were taken out at 25s. to 30s. per cwt. Of 15 kegs fair softish Socotrine 5 kegs sold at 72s. 6d. per cwt. 17 cases native Cape were bought in at 30s. per cwt. 5 cases Zanzibar sold at 70s. to 72s. 6d. per cwt. 904 gourds Curaçoa sold at 43s. per cwt. for fair livery downwards. Other 21 boxes ditto at 25s. to 32s. per cwt., subject to owners' approval.

AMBERGRIS.—1 tin nett 19¾ oz. was bought in at 100s. per oz. Of other 4 tins 1 tin sold at 75s. per oz., and another, subject to holders' confirmation, at 60s. per oz.

ANNATTO SEED.—29 bags were taken out at 2½d. per lb.

ARECA NUTS.—13 bags of fair quality were bought in at 17s. Of other 42 bags 10 bags sold at 14s. per cwt.

BALSAM COPAIBAE.—2 casks of clear dark yellow quality were taken out at 1s. 9d. per lb. Other 10 cases at 1s. 10d.

BALSAM TOLU.—13 cases fair to fair hard were taken out at 1s. 4d. to 1s. 6d. per lb.

BUCHU LEAVES.—10 bales fair green sold at 1s. to 1s. 1d. per lb.

CALUMBA ROOT.—100 bags medium sorts sold at 9s. per cwt., and 12 bags pickings 1 CSD at 8s. 6d. 30 bags washed realised 13s. to 15s. per cwt.

CANTHARIDES.—3 cases China were bought in at 2s. per lb.

CARDAMOMS.—9 cases East Indian were bought in at 1s. 4d. per lb., 3 packages fair bold Ceylon seed selling at 1s. per lb. Of other 13 cases long rather brown Mysores were bought in at 2s. 6d. to 3s. per lb., good seed selling at 1s. 6d. per lb. Other 28 packages part sold at 1s. 3d. per lb. downwards for less desirable lots, good seed also fetching 1s. 6d. per lb. Other 67 cases part sold at 1s. 9d. per lb. downwards. Other 61 cases sold at 1s. 8d. per lb. downwards.

CASCARA SAGRADA.—50 bags of fair quality did not sell.

CASSIA FISTULA.—20 bags all sold at 33s. to 34s. per cwt. for fair quality.

CHALMOOGRA OIL.—2 cases, each 2 × 39lb. tins, were taken out at 2s. 6d. per lb.

CHIRETTA.—30 bales of fair quality, offered without reserve, sold at 1¾d. per lb.

COCA LEAVES.—Of 30 cases Ceylon 28 cases sold at 7d. per lb., and 2 cases at 6d.

COD LIVER OIL.—25 casks Newfoundland were taken out at 5s. per gallon.

COLOCYNTH.—8 casks were bought in at 1s. 6d. to 1s. 7d. per lb. for fair pale part small part broken and part dark.

CROTON OIL.—1 case sold without reserve at ½d. per lb.

CUBEBS.—70 bags fair brown and grey were bought in at 35s. per cwt.

CUMMIN SEED.—10 bags good Maltese were taken out at 40s. per cwt.

DRAGONS' BLOOD.—9 cases Zanzibar Drop were taken out at 45s. per cwt. Other 12 cases from Singapore part sold at £8 to £8 15s. per cwt. for mixed seedy to seedy lump.

ERGOT OF RYE.—15 packages fair Spanish were taken out at 1s. 8d. per lb.

ESSENTIAL OILS.—1 case West Indian oil orange was taken out at 3s. 6d. per lb. 6 crates bay oil did not sell. 2 cases Bourbon geranium oil were bought in at 19s. per lb. 16 cases Portuguese oil eucalyptus were bought in at 1s. 6d. 28 cases Australian ditto at 1s. 1d. per lb. Other 4 cases guaranteed B.P. by Mr. Umney's analysis, sold without reserve at 10½d. per lb. 3 cases lemongrass oil sold at 5¼d. per oz. 12 cases oil Cassia sold without reserve at 2s. 1d. to 2s. 2d. per lb. Other 20 cases at 2s. 3d. to 2s. 6d. per lb. 8 cases Cajeputa were taken out at 3s. per bottle. 1 case West Indian oil of limes sold subject to owners' confirmation at 2s. per lb. 4 cases dementholised oil peppermint sold without reserve at 3s. 4d. per lb.

GAMBOGE.—Of 48 cases, good bright pipe was bought in at £15 per cwt., fair bright sold at £10 17s. 6d., and good pickings at £10 2s. 6d. per cwt.

GUAZA (HERBA CANNABIS INDIC.).—10 robbins good tops were bought in at 2s. 8d. per lb.

GUM AMMONIACUM.—1 case good drop sold at 38s. per cwt.

GUM ARABIC.—17 bales Aden gum were taken out at 47s. per cwt.

GUM ASAFETIDA.—123 packages were all bought in at 15s. to 55s. per cwt., quality being in many cases very inferior.

GUM ELEMI.—20 cases of only medium quality were taken out at 90s. per cwt.

GUM KINO.—9 cases fair East Indian sold without reserve at 7d. per lb.

GUM MYRRH.—2 cases picked gum were taken out at £7. Other 4 cases fair ditto at £6 10s. per cwt. 7 barrels fair sorts sold at 53s. per cwt., subject to owners' confirmation.

GUM TRAGACANTH.—12 packages part sold at £5 10s. to £13 12s. 6d. per cwt.

IPECACUANHA.—Of 20 bales Rio a few bales sold at 9s. 8d. per lb. Other 12 bales were taken out at 9s. 8d. Other 20 bales part sold at 9s. 7d. to 9s. 9d. per lb. 4 bags Carthagena were bought in at 4s. 6d., other 11 bags ditto at 4s. 3d. to 4s. 4d. per lb. Other 22 barrels, part mouldy, also failed to sell.

KOLA NUTS.—1 barrel good washed were bought in at 6d. per lb. Other 4 bags sold at 3¼d. per lb.

LIME JUICE.—5 puncheons West Indian were taken out at 1s. 6d. per gallon.

MUSK.—12 bottles sold at 65s. per oz., subject to owner's confirmation.

NUX VOMICA.—49 bags good Cochin were bought in at 11s. per cwt.

RHUBARB.—5 chests common round, offered without reserve, sold at 6½d. to 8½d. per lb. Of other 46 cases good flat was bought in at 2s. 6d., 3 cases selling without reserve at 1s. 6d. to 1s. 8d., other 18 cases common ditto selling, also without reserve, at 5½d. to 6¼d. per lb.

SARSAPARILLA.—1 bale native Jamaica sold at 11½d. per lb. Other 5 bales Jamaica sold at 1s. 2d. per lb. for fair, and 4 bales red native at 11d. to 11½d. Other 11 bales Jamaica were bought in at 1s. 5d. per lb. 9 bales Lima sold at 1s. 4d. per lb. for the sound, and at 1s. to 1s. 1d. per lb. for ICCD.

SENEKA ROOT.—5 bales were taken out at 2s. 4d. per lb.

SENNA.—103 bales Tinnivelly only part sold at ½d. to ¾d. per lb. for very common stuff, the better qualities selling up to 4d. per lb. for bold green leaf. Good pods were bought in at 2½d. per lb. Other 54 bales part sold at about same figures for the low qualities, good pods fetching 2d. to 2½d. per lb.

TAMARINDS.—36 bags dark West Indian were bought in at 10s. per cwt. Other 20 barrels ditto sold at 12s. Other 18 bags good ditto at 13s. to 13s. 3d. per cwt.

TURMERIC.—33 bags Bombay Finger were taken out at 18s. 82 bags, offered without reserve, part sold at 14s. 6d. to 15s. 130 bags good Madras bulbs sold without reserve at 12s. 6d. to 15s. per cwt.

VALERIAN ROOT.—12 bales Japan were bought in at 32s. 6d. per cwt.

ZEDOARY ROOT.—1 bale was taken out at 20s. per cwt.

NOTES IN PARLIAMENT.

The New Cheque Duty Abandoned.—The Chancellor of the Exchequer, after a good deal of vacillation and embarrassing delay, has finally yielded with a good grace to the agitation against the proposed doubling of the stamp duty on cheques. In announcing, on Monday last, the abandonment of the tax, he practically confessed that he had proposed it in ignorance of the disturbance to business which it would cause and of the smallness of the yield which he would actually derive from it.

The Sugar Convention.—In a written reply to a question put by Sir Howard Vincent, Mr. Chamberlain explains with reference to the Sugar Convention at Brussels that in order to secure the total abolition of bounties and the restoration of the sugar trade to its normal channels it was necessary for His Majesty's Government to undertake that foreign and colonial sugar should be able to compete for the English market on equal conditions. There will be full opportunity for the discussion of the Convention and the final protocol before it is ratified, but no precise date can be given at present.

The Butter Standard.—Mr. Hanbury, replying to Mr. O'Shaughnessy in the House of Commons on Monday, expressed the opinion that salt butter will not be in any way injuriously affected by the new standard. The brine butter, to which hot brine is added instead of salt, with the result of largely increasing the percentage of water, will, he says, no doubt be affected; but the practice has for some time been dying out, and at a recent meeting of the South of Ireland Butter Merchants' Association, held in Limerick, it was resolved to recommend the use of dry salt instead of brine. Mr. Hanbury believes that such a course will add to the price which the butter will fetch in the market. In any case the standard must be the same in both countries.

Shop Hours.—The House of Lords on Monday again rejected Lord Avebury's Bill relating to shop hours—this session known as the Shops Early Closing (No. 2) Bill. The principle of the Bill is to empower local authorities to regulate the time for closing shops in their areas if they are satisfied that a two-thirds majority are in favour of early closing. The Earl of Wemyss, who moved the rejection of the Bill, flippantly described it as a jack-in-the-box measure—in allusion to the frequency with which it has been brought forward. The Lord Chancellor and Lord Salisbury, who also spoke, really evaded discussion of the principle, but insisted on the undesirability of allowing a Bill to proceed which only last year had been rejected. This argument will certainly not deter Lord Avebury from prosecuting his crusade when opportunity offers. He knows by experience the value of reiterated and persistent knocking at the doors of the Legislature.

Manufacture and Sale of Celluloid.—A lengthy question on this subject was put by Lord Saltoun in the House of Lords on Tuesday to Lord Belper as the representative of the Home Office in the Gilded Chamber. The noble lord pointed out that celluloid is highly inflammable and sometimes contains explosive substances manufactured chiefly from guncotton, and that it is used freely in articles of attire such as combs and collars. He wished to know whether the Government would cause such modifications to be made in the manufacture and place such regulations and restrictions upon its sale as would render impossible the recurrence of the many serious burning accidents which have already resulted from the unrestricted sale of this article.

Lord Belper replied that during the last few years factories in which celluloid is manufactured have been brought under the Explosives Act, and there is a system of inspection which goes a long way to securing greater purity of the materials employed. A large number of articles, said his lordship, are manufactured from the substance, and it would be practically impossible to regulate the sale without employing a whole army of inspectors. Compared with the large sale of articles manufactured from celluloid, the accidents are, in the opinion of the Home Office, very few in number, and the Home Secretary, after carefully considering the matter, does not see his way to introduce legislation dealing with the subject.

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—Lancet.

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The only filters awarded
GRAND PRIX,
PARIS, 1900.

Sole Makers:
J. DEFRIES & SONS, Ld.
147, Houndsditch, London, E.C.

DIARY OF THE WEEK.

Wednesday, May 21.

Royal Microscopical Society, 20, Hanover Square, W., at 7.30 p.m.—"Freshwater Entomostraca," by D. J. Scourfield.

Western Chemists' Association, Westbourne Restaurant, 1, Craven Road, Paddington, W., at 9 p.m.—Ordinary Monthly Meeting

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

James Bussby and Geo. Edwards, carrying on business as oil, grease and chemical manufacturers, Coppy Clough Oil Works, Church, near Accrington, under the style or firm of J. Bussby and Co. Debts will be received and paid by George Edwards.

Henry Saunders and Thomas William Turner, surgeons and general medical practitioners, Aynhoe, Northampton. Debts will be received and paid by Henry Saunders and T. W. Turner, or by whom they may appoint.

Special Notice to Correspondents.

All Communications for the 'Pharmaceutical Journal' must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and if intended for publication in the current week's issue, should arrive not later than Wednesday morning.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Abraham, Ashley, Birkbeck, Bott, Churchill, Cruickshank, Dallinger, Davis, Drayton, Ellis, Ferrier, Ford, Hebb, Hirsch, Holme, Houghton, Ingham, Joannis, Leighton, Matthews, Miller, Morgan, Mumbray, Nelmes, Nunn, Parry, Philp, Pickering, Rackham, Raphael, Roberts, Sabatier, Samuel, Sankey, Shuttleworth, Skinner, Squire, Stedman, Stiles, Udale, Whitfield.

Pharmaceutical Journal

SATURDAY, MAY 24, 1902.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

WANTED immediately, a junior ASSISTANT; one with a knowledge of Photography preferred.—THE PROSSER ROBERTS Co., 13, Church St., Camberwell, S.E.

WIMBLEDON.—Wanted at once, a reliable ASSISTANT for good-class Dispensing business; indoors.—Apply, with usual particulars, POOLEY & Co., Chemists, Wimbledon.

FOLKESTONE.—Junior ASSISTANT wanted in Dispensing business, to live indoors.—Send full particulars and references, and enclose photograph, to J. STAINER & SON, Folkestone.

MESSRS. TIMOTHY WHITE COMPANY, Chemists, Portsmouth, have a vacancy for a trustworthy young qualified ASSISTANT; early prospect of managership; a JUNIOR also required.

SUSSEX COUNTY HOSPITAL, BRIGHTON.—Wanted, an Assistant DISPENSER; Minor qualification; male; hours 9.30 to 4; dinner provided; salary £80 per annum.—Particulars to E. FENNER, Dispenser.

WANTED, a smart qualified ASSISTANT (second of three) for West End of London.—Give full particulars, including experience, references, and salary required (indoor), ACACIA, Pharm. Journal Office, 8, Serle St., W.C.

ASSISTANT wanted at once, with experience in select Dispensing establishment, and qualified; two kept.—Apply, stating experience, salary required (indoors), &c., WHISTON & Co., Chemists, St. James's Sq., Bath.

LONDON HOMŒOPATHIC HOSPITAL, Great Ormond St., W.C.—Wanted, DISPENSER, fully qualified man with some knowledge of Homœopathic Pharmacy.—Age, experience, and references to the SECRETARY-SUPERINTENDENT.

SCARBOROUGH.—ASSISTANT required for a general mixed business; season, or longer term.—Apply, stating age, references, and salary required, to HENRY CHAPMAN & SONS, Dispensing and Photographic Chemists, Scarborough.

WANTED, Junior Retail ASSISTANT; qualified; indoor; must have had good experience in high-class pharmacy.—Apply, with full particulars as to age, experience, and references, to BRADY & MARTIN, Northumberland Rd., Newcastle-on-Tyne.

Assistants Wanted—Continued

WANTED, qualified ASSISTANT (outdoor), for Dispensing and light Retail business.—Apply with full particulars, and enclose photo if convenient, to LONG & STRICKLAND, Pharmaceutical Chemists, Bognor-on-Sea.

PARIS.—Wanted, by a first-class Chemist, a qualified ASSISTANT, with long London or Foreign experience; must be expert salesman, competent Prescriber.—Send particulars, with photo (will be returned), to J. DELOUCHE, 2, Place Vendôme, Paris.

GENTLEMAN required immediately, as DISPENSER for a Public Institution; preference will be given to major student, or one able to make good use of the considerable spare time at his disposal during a great portion of the year.—HON. SEC., 231, Maida Vale, W.

COVENTRY.—Junior wanted at once, about 22 years of age for a light Retail and Dispensing business; indoors.—State age, height, experience, references, and salary required (half-day holiday every week and alternate Sunday duty), HENRY WELTON, City Pharmacy, Coventry.

HENRY JEFFRIES, Guildford, requires a smart, gentlemanly Junior ASSISTANT at the end of the month, accustomed to a good-class Dispensing and Retail business. Some previous knowledge of Dispensing essential. Applicants please state age, height, salary required, and enclose photo, if possible.

REPRESENTATIVE for South Africa.—An English firm of Wholesale Druggists, having already a good connection in South Africa, are open to appoint a young, energetic, and thoroughly competent REPRESENTATIVE.—Write, giving full particulars as to experience, age, qualifications, etc., to Z. N., 17, Deacon's, Leadenhall St.

WANTED at once, through the death of the proprietor, an ASSISTANT (indoor); minor qualification necessary; age from 25 to 30; must understand a good agricultural business; one who has been apprenticed to a country business preferred; character and references indispensable.—Apply, Mr. OMBLER, Chemist, Market Weighton, Yorks.

CAPE TOWN.—Qualified ASSISTANT wanted; salary, £12 per month first year, £13 10s. second year, and £15 third year; room supplied, but not board; second-class passage paid; three years' agreement; small commission on returns paid to a good man.—Apply, stating experience, to P. J. P. & Co., c/o John Murdoch & Co., 52, Leadenhall St., E.C.

A Copy of this Inset is inserted in every *Pharmaceutical Journal* issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at the Publishing Office, 8, Serle St., London, W.C., and at more than two hundred addresses in the United Kingdom; a list of these addresses will be found on page 13*a*.

Assistants Wanted—Continued

CAPE COLONY.—Wanted, qualified ASSISTANT, of good experience and having undeniable references; aged about 23; salary, 1st year, £12 per month; 2nd year, £13 per month; 3rd year, £14 per month; sleeping accommodation provided; second-class passage paid out; 3 years' agreement.—Apply, COLONY, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

INDIA (N.W. Province).—Wanted, a good ASSISTANT, well up in all branches of a Chemist's business; Minor qualification. Salary, 1st year 200 rupees per month, 2nd year 225 rupees per month, 3rd year 250 rupees per month; free furnished apartments; second-class passage paid out; required to start as quickly as possible; candidates must hold undeniable references.—Address, INDIA, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CALCUTTA.—Wanted at once, a qualified ASSISTANT; age about 24 years; must be able to conduct analysis; first-class opening for a competent man. Salary, 1st year, 275 Rs. per month; 2nd year, 300 Rs. per month; 3rd year, 325 Rs. per month, and 4th year, 350 Rs. To a candidate of exceptional experience the salary will be increased. 4 years' agreement. Second class passage paid both ways.—Apply by letter to CALCUTTA, c/o Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

STRAITS SETTLEMENTS.—Good opportunity for qualified ASSISTANT; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second-class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to STRAITS SETTLEMENTS, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

SANITARY INSPECTORSHIPS.—Salaries £100 to £250. Numerous vacancies. Permanent appointments. Chemists or Assistants desiring change of occupation should qualify as Sanitary Inspectors. Special Postal Course of Lessons now commencing for London, Liverpool, Cardiff, Manchester, Leicester and Newcastle-on-Tyne exams. Anyone of average ability can pass. Had over 250 successful candidates, and fully half had no previous knowledge of sanitary matters.—Apply, ROBERT H. MUSHENS, Sanitary Science Teacher, Sunderland.

SOUTH DEVON & EAST CORNWALL HOSPITAL,
PLYMOUTH.

WANTED, a qualified DISPENSER, a portion of whose time will be occupied in the duties of Investigating Officer.

Salary £120 per annum.

Further particulars may be obtained from the Assistant Secretary at the Hospital, to whom applications, stating age, and accompanied by copies of recent testimonials, should be forwarded by the 27th instant.

HEMSLEY H. SHANKS, R.N.,
Hon. Secretary.

Plymouth, May 12, 1902.

SOUTH AFRICA (healthy coast town).—At once, two qualified ASSISTANTS required, one for the Wholesale and the other for the Retail. Must be thoroughly reliable, competent, steady, and of sober habits; latter most essential. Scotchmen preferred; aged from 21 to 25; Minor qualification. For the Wholesale, the Assistant must have had previous experience. For the Retail, the Assistant must have had first-class Dispensing and Retail experience. Salary, 1st year, £13 10s. per month; 2nd year, £14 10s.; 3rd year, £15 10s.; without board and outdoor (sleeping accommodation provided, conditionally, for Retail Assistant). Second-class passage paid out, and allowance on board. Three years' agreement.—Address, SOUTH AFRICA, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

A Copy of this Inset will be forwarded gratis to any applicant who sends a stamped addressed wrapper to the Publishers. Copies can also be obtained on day of publication at more than two hundred addresses in the United Kingdom; a list of these will be found on page 13a.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM; qualified; abstainer.—E. KEMP, 11, Cheapside, St. Leonards-on-Sea.

LOCUM TENENS, or Permanent; fully qualified (Dentist).—J. M. M., 25, Stodart Rd., Penge.

TEMPORARY or otherwise; abstainer; good reference.—PHARMACIST, 107A, Aslett St., S.W.

LOCUM TENENS or MANAGER; West-end experience.—Apply, M.P.S., 8, Serle St., London, W.C.

ASSISTANT; qualified; 22; experienced; good references; photography.—A. E., 425, Chorley Old Rd., Bolton.

GERMAN; qualified Pharmacist; speaking French; best references; willing to give a month.—A. B., 74, Mildmay Park, N.

WEST AFRICA.—Young Scotchman seeks Situation; experienced; unqualified.—PLUMB RULE, c/o McGregor, 91, Listria Park, Stoke Newington, N.

MANAGER or SENIOR; qualified; 27; exceptional first-class experience; highest references.—Apply, ARISTOL, Pharm. Journal Office, 8, Serle St., W.C.

QUALIFIED; 26; married; 10 years' good all-round experience; desires permanency; good references; disengaged.—GROSS, 7, Brunton Rd., Lancaster.

LOCUM TENENS; days, weeks; moderate; reliable; engagements booked forward.—T. C. BEACH, M.P.S., Windsor Edge, Inchbrook, Stroud, Glos. Telegrams: Beach, Nailsworth.

LADY DISPENSER, 22, Apothecaries' Hall Certificate, experienced, desires re-engagement with Doctor; not north; references exchanged.—Miss M. MARTIN, 40, London Rd., King's Lynn.

ASSISTANT; 30; SENIOR, MANAGER or LOCUM; thorough good town and country experience; smart Salesman, Dispenser and Prescriber; outdoors; disengaged.—RHEI, 30, Rosaville Rd., Fulham.

DISPENSER and BOOK-KEEPER to Surgeon, Chemist, Dispensary or Institution; mornings, evenings; part time or otherwise; qualified; experienced; excellent references.—SALICINE, 8, Serle St., W.C.

LOCUM, BRANCH MANAGER or SENIOR; qualified; 37; store experience and West-end; Extractor, Prescriber, and knowledge of Photography; excellent references; disengaged.—STATIM, 140, Kennington Park Rd.

ADVERTISER, middle-aged, seeks re-engagement, Wholesale or Retail, where services and £50 would secure permanent moderate income; good knowledge of Chemicals and Photography.—F. R., 203, Leytonstone Rd., E.

F. S. M. C. and Minor; LOCUM or ASSISTANT; 27; disengaged; experienced in Dispensing, Photography and Optics; open to purchase good-class *bonâ fide* business.—PHILLIPS, The Pentry, Llanthewy Rytherch, Abergavenny.

For Sale

MILK STERILIZERS.—For Sale, two Aymard MILK STERILIZERS; copper; each 36 gallons; in good condition and newly re-tinned; cost £52.—Offers to be made to the STEWARD, St. Thomas's Hospital, S.E.

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FOR immediate Disposal, first-class Dispensing and light Retail ; returns between £800 and £900 ; no reasonable offer refused.—Apply, Sidonal, Pharm. Journal Office, 8, Serle St., W.C.

BLACKPOOL.—Chemist and Photographic Stock and Fixtures to be Disposed of, proprietor having Medical Army Appointment ; shop can be had ; low rental.—Crosher, 1, Kensington Buildings, South Shore, Blackpool.

SOUTH COAST.—A select Retail and Dispensing Business, occupying a commanding position on the marine front of a leading fashionable town ; returns exceed £1,400.—Apply, Salicine, Pharm. Journal Office, 8, Serle St., W.C.

FOR immediate disposal, Chemist and Druggist Business, in market town ; exceptional circumstance ; £250 cover stocks, fixtures, fittings, &c. ; turnover about £500, can be greatly increased under energetic management.—E. W. Helps, Bank Chambers, Bridgwater.

LONDON (North).—Old-established ; same hands 16 years ; returns £900 ; gross profits £400, under management ; owner retiring ; good house and shop ; books shown ; large stock ; lease granted, at £56 a year, for 21 years ; price £800, or near offer.—T. N., Pharm. Journal Office, 8, Serle St., W.C.

MONTGOMERYSHIRE. — An old-established Chemist's Business in a manufacturing and good market town, together with the freehold premises, consisting of large dwelling-house and garden, and is situated in the best position of the principal street ; capital required about £1,750 ; this is an excellent opportunity for an energetic young man, especially in the agricultural part of the business, and one who has a knowledge of Welsh ; good opening for Prescribing and Dentistry.—Pharmacist, Pharm. Journal Office, 8, Serle St., W.C.

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WANTED.

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OFFERED.

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OFFERED—*Continued.*

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Twelve extracting forceps, elevator and lancet, in mahogany case ; will accept 50s. ; also mahogany chair, with head rest, £2 2s.—H. Midgley, Aireview, Silsden, Keighley.

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The "Pharmaceutical Journal Inset" of Saturday next, the 31st inst., will be sent to every Chemist and Druggist in business in the United Kingdom. It will have a guaranteed circulation of Thirteen Thousand Copies. Advertisements for Sale and Exchange Column, Assistants, Engagements, Businesses, Apprentices, Shops, For Sale, &c., &c., must reach the Publishers, 8, Serle Street, London, W.C., not later than Thursday next, 4 p.m.

13,000 COPIES

May 22, 1902.

ADVERTISEMENT INSET

A Copy of this Inset is inserted in every Copy of the ***Pharmaceutical Journal*** issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. It can also be obtained by personal application, on the day of publication, at any address in the following list

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17, Bloomsbury Square, London, W.C.
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Also at the Advertising Agency of Messrs. G. Street & Co., Ltd., 30, Cornhill, E.C.; 8, Serle St., W.C.; and 164, Piccadilly, London, W.

London, E.C.

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Mr. W. Warren, 24, Russell St., Covent Garden.
City School of Pharmacy, 27, Chancery Lane.

W.

Mr. F. Andrews, 34, Leinster Terrace.
Mr. E. Beaton, 5, Lonsdale Terrace, Kew Gardens.
Mr. T. W. Cleave, St. Mary's Rd., Ealing.
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Mr. S. A. Sturton, 9, Goldhawk Rd.

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Mr. W. F. Gulliver, 6, Lower Belgrave St.
Mr. W. Wilson, 281, Brixton Rd.
London College of Chemistry, 323, Clapham Rd.

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Mr. T. Nicholls, 199, Wick Rd.

N.

Mr. H. Cryer, 506, Holloway Rd.
Mr. John H. Frost, 9, High St., Hornsey.
Mr. J. Holding, 169, Hemingford Rd.
Mr. W. J. Pinchen, 20, St. James' Par., Muswell Hill.
Mr. J. T. Wallis, 78, Essex Rd.

E.

Mr. W. R. Barnes, The Terrace, Upton Manor.
Mr. C. E. Garman, 278, Roman Rd., Bow.
Mr. J. H. Gradidge, 393, Mile End Rd.
Mr. Snowden Kirk, 6, Chrisp St., Poplar.
Mr. J. H. Smith, 227, Commercial Rd.

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Mr. A. Pellew, 374, Old Kent Rd.
Mr. W. C. Sayers, 63, High St., Lewisham.
Mr. H. Wiggins, 236, Southwark Park Rd.
Metropolitan College, 160, Kennington Park Rd.
South London School, Kennington Rd.
Westminster College of Chemistry, Trinity Square.

Provinces.

BEDFORD.—Mr. J. B. Taylor, 69A, High St.
BIRKENHEAD.—Mr. H. B. Morgan.
BIRMINGHAM.—Mr. J. Poole, 13, Gt. Hampton St.
Mr. C. Thompson, Sparkbrook.
Mr. G. E. Perry, 171, Hagley Rd., Edgbaston.
Messrs. F. Green & Co., Phœnix Mills, 393, Farm St.
Mr. J. Austin, 395, Nechells Park Rd., Nechells.
Messrs. Southall, 19-21, Lower Priory.
BLACKPOOL.—Mr. C. H. Turver, 40, Market St.
BOLTON.—Mr. Percy Knott, 1, Blackburn Road.
BOOTLE.—Mr. H. Wyatt, 223, Stanley Road.
BOSTON.—Mr. B. J. Kent, Spilsby Road.
BOURNEMOUTH.—Mr. F. E. Bilson.
BRADFORD.—Mr. A. H. Waddington, 31, Darley St.
Mr. J. A. Mitchell, 33, St. Mary's Rd.
BRAINTREE.—Messrs. Row & Son, High St
BRENTFORD.—Mr. A. Wood, 116, High St.
BRIGHTON.—Mr. J. R. Gwatkin, 49, Grand Parade.

Provinces.—*Continued.*

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Mr. E. F. Young, 67, Wells Road.
BURNLEY.—Mr. J. A. Heaton, 121, St. James' St.
BURY ST. EDMUNDS.—Mr. O. A. Clark.
CAMBRIDGE.—Mr. A. S. Campkin, 11, Rose Cresc't.
CANTERBURY.—Mr. C. Bing, 43, St. George's St.
CARLISLE.—Mr. J. Hallaway, 5, Devonshire St.
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CHORLEY.—Mr. W. Hill, 25, Market St.
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CREWE.—Mr. J. Cumming, 6, Victoria St.
CROYDON.—Mr. J. Clarke, 38, George St.
DARLINGTON.—Mr. J. Robinson.
DARWEN.—Mr. R. Shorrock, 6, Market St.
DEVONPORT.—Mr. C. T. Weary, 17, Trafalgar Pl.
DEWSBURY.—Mr. R. Gledhill, 61, Westgate.
DONCASTER.—Mr. M. H. Stiles, 2, Frenchgate.
DOVER.—Mr. R. M. Ewell, 34, Townwall St.
ENFIELD.—Mr. F. Goldby, Enfield Town.
EXETER.—Mr. D. Reid, 2, Queen St.
GATESHEAD.—Mr. Matthew Bell, 9, Brinkb'k Av.
GLOUCESTER.—Mr. W. Minchin, 15, Westgate St.
GRANTHAM.—Mr. W. Whysall, High St.
GRAVESEND.—Mr. R. Feaver Clarke 21, High St.
GRIMSBY—Mr. H. W. Colley, 253, Cleethorpe Rd.
GT. YARMOUTH.—Mr. W. S. Poll, 32, Regent Rd.
HARROW-ON-THE-HILL, Mr. S. J. Gunn, High St.
HARTLEPOOL.—Mr. J. Horsley, 104, High St.
HASTINGS.—Messrs. J. Bell & Co., 22, Robertson St.
HEXHAM.—Messrs. Gibson & Son, 16 & 18, Fore St.
HEYWOOD.—Mr. F. Hazlitt, Market St.
HITCHIN.—Messrs. W. Ransom and Son.
HORNCASTLE.—Messrs. W. Kemp & Son.
HUDDERSFIELD.-Mr. R. C. Walshaw, 4, Market Pl.
HULL.—Mr. C. B. Bell, 6, Spring Bank.
Mr. G. Hoyles, Holderness Road.
Mr. A. Richardson, 443, Hessle Road.
IPSWICH.—Messrs. Wiggin & Son, 34, St. Matthew's.
JARROW-ON-TYNE, Mr. J. D. Rose, 18, Ormonde St.
KENDAL.—Messrs. Severs & Bateson.
KIDDERMINSTER.—Mr. M. Smith, 48, Oxford St.
LANCASTER.—Mr. J. Vince, 37, Cheapside.
LEEDS.—Mr. W. S. Baxter, Bramley.
College of Pharmacy, 19, Springfield Place.
Mr. F. C. Long, Headingly.
Messrs. Reynolds & Branson, Ltd., 13, Briggate.
LEICESTER.—Mr. F. W. Goodess, Hotel St.
LINCOLN.—Mr. J. T. Birkbeck, 5, Bailgate.
LIVERPOOL.—Mr. A. Buck, 179, Bedford St.
Mr. W. H. Clubb, 138, Smithdown Rd.
Mr. C. W. Cooke, 323, Park Rd.
Mr. J. W. Kelly, 16, County Road, Walton.
School of Pharmacy, 6, Sandon Terrace.
Messrs. Symes & Co. Ltd.
Mr. F. Walker, Beacon Lane.
LYNN.—Mr. W. W. Crisp, 3, Saturday Market.
MAIDSTONE.—Mr. F. Corfe, 5, Gabriels Hill.
MANCHESTER.—Mr. J. H. Nidd, 714, Rochdale Rd.
Mr. H. Kemp, 35, Wilbraham Rd., C/H.
Mr. C. Swinn, Upper Moss Lane.
Mr. G. L. Westmacott, 17, Market St.
Mr. J. B. Williams, 42, Brook St.
Messrs. Jas. Woolley, Sons & Co., Ld.
Northern College, 100, Burlington St.
Manchester College, 225A, Oxford St.
MANSFIELD.—Mr. D. J. Patterson, West Hill.
MORPETH.—Mr. J. Whittle, Bridge St.
NEWCASTLE-ON-TYNE.—School of Chemistry, 55, Northumberland St.
Messrs. Proctor, Son & Clague, 11, Grey St.
NEWPORT (Mon.).—Mr. T. P. Garrett.
NORTHWICH.—Mr. G. Humphreys, High St.
NOTTINGHAM.—Mr. F. R. Sergeant.
School of Pharmacy, 13, Victoria St.
NORTHAMPTON.—Mr. John Bingley.
NORWICH, Messrs. Fuller & Co., Rampant Horse St.
NUNEATON.—Mr. G. Iliffe, Market Place.
OLDHAM.—Mr. H. Bates, 38, George St.
OXFORD.—Mr. T. J. Burbank, 116, Walton St.
PETERBOROUGH.—Messrs. Sturton & Sons.
PLYMOUTH.—Messrs. Balkwill & Co.
Mr. C. J. Park, Mutley Plain.
PORTSMOUTH.—Mr. T. Brewis, 325, Fratton Rd.

Provinces.—*Continued.*

PRESTON.—Mr. F. A. Williamson, Garstang Rd.
RAWTENSTALL.—Mr. J. E. Lord, Rossendale.
REDHILL.—Mr. W. H. Fowler, 2, Station St.
ROMFORD.—Mr. J. W. Lasham, High St.
ROTHERHAM.—Mr. J. Horsfield, 1, College St.
RYDE.—Mr. H. Pollard, 168, High St.
ST. HELENS, Mr. J. G. Wallbridge, 52, Liverpool Rd.
ST. LEONARD'S-ON-SEA.—Mr. C. R. Stedman.
SCARBOROUGH.—Mr. J. Whitfield, 113, Westboro.
SHEFFIELD.—Mr. H. Antcliffe, West Bar.
Mr. P. Carr, 85, Ecclesall Rd.
College of Pharmacy, 116A, The Moor.
Mr. G. T. W. Newsholme, 27, High St.
Mr. J. B. Pater, Broomhill.
Mr. G. Squire, 19, Haymarket.
SHREWSBURY.—Mr. W. G. Cross, 70, Mardol.
SOUTHAMPTON.—Messrs. Randall & Son.
SOUTHPORT.—Mr. Jas. Righton, 293, Lord St.
STAFFORD.—Mr. J. Averill, 10, Market Square.
STOCKPORT.—Mr. W. B. Orton, 67, St. Petersgate.
STOCKTON-ON-TEES.—Messrs. Brayshay & Son.
STOKE-ON-TRENT.—Mr. F. Adams, High St.
SUNDERLAND.—Mr. C. Ranken, Stockton Road.
TODMORDEN.--Mr. H. P. Lovatt, 6, Water Street
TOTTENHAM.—Mr. A. E. Tanner, Tottenham Ter..
TUNBRIDGE WELLS.—Mr. A. E. Hobbs.
ULVERSTON.—Mr. R. Willan, 5, Market St.
WAKEFIELD.—Mr. J. H. Chaplin, 60, Westgate.
WALSALL.—Mr. E. M. Elliott, 42, Park St.
WARRINGTON.—Mr. H. N. Ashton, 63, Sankey St.
Mr. J. Rymer Young, 40, Sankey St.
WESTON-SUPER-MARE.—Mr. John Cooper.
WIDNES.—Mr. C. J. Bennett, 32, Victoria Rd.
WIGAN.—Mr. J. Phillips, 58, Wallgate.
WINCHESTER.—Mr. A. E. Chaston, High St.
WINDSOR.—Mr. B. Westlake, 91, Peascod St.
WOLVERHAMPTON.—Mr. T. J. Gibson.
WOOLWICH.—Mr. A. J. Wing, 69, Powis St.
WORKINGTON.—Mr. J. R. Mason, 4, Pow St.

Wales.

ABERAVON.—Mr. G. B. Loveluck, High St.
BANGOR.—Mr. Owen Jones, Market Place.
FLINT.—Mr. O. William Jones, Apothecaries' Hall.
HOLYHEAD.—Mr. F. J. Jones, 12, Market Place.
LLANRWST.—Mr. O. I. Jones, Apothecaries' Hall.
MERTHYR.—Mr. E. W. Harris, 128, High St.
SWANSEA.—Mr. N. M. Grose, 8, Temple St.
WREXHAM.—Mr. C. G. Caldecott, Regent St.

Scotland.

ABERDEEN, Mr. John Cruickshank, 42, George St.
ARBROATH.—Mr. A. Naysmith, High St.
DUNDEE.—Mr. C. Kerr, 56, Nethergate.
EDINBURGH.—Mr. J. A. Forret, Brougham Place.
Mr. C. F. Henry, 1, Brandon Terrace.
FALKIRK.—Mr. W. Forgie, 105, High St.
GLASGOW.—Mr. T. Dunlop, 181, Albert Road.
Mr. J. A. Russell, 212, New City Rd.
School of Pharmacy, 180, West Regent St.
Mr. J. W. Sutherland, 127, Buchanan St.
GREENOCK.—Mr. A. McNaught, 4, W. Blackhall St.
HAWICK.—Mr. W. S. Turnbull, 2, Dovemount Pl.
KIRKCALDY.—Mr. David Storrar, 228, High St.
LEITH.—Mr. J. Bowman, 3, Duke St.
LINLITHGOW.—Mr. A. Spence, 135, High St.
MONTROSE.—Mr. A. Davidson, 172, High St.
PAISLEY.—Mr. A. Fraser, 100, High St.
PETERHEAD.—Mr. J. F. Tocher, 1, Chapel St.
STIRLING.—Mr. John Raffan, 16, Port St.

Ireland.

BELFAST.—Messrs. Grattan & Co., Ltd.
Mr. J. B. Robinson, Duncairn Medical Hall.
Mr. J. C. Payne, 13, Shaftesbury Sq.
CORK.—Mr. T. R. Lester, 106, St. Patrick St.
DALKEY.—Mr. G. D. Beggs, Medical Hall.
DUBLIN.—Apothecaries' Hall, 40, Mary St.
Mr. J. I. Bernard, 26, Clare St.
LIMERICK.—Messrs. John Laird & Co.
LONDONDERRY.—Messrs. Maxwell, Greer & Co
WATERFORD.—Messrs. G. White & Sons.

PHARMACEUTICAL SOCIETY.

OFFICIAL NOTICES.

THE JACOB BELL MEMORIAL SCHOLARSHIPS.

Two scholarships will be offered for competition on June 17, 1902.

Each scholar receives £30, in addition to free Laboratory instruction and admission to the Lectures in the School of Pharmacy for the Session 1902-3. He also receives books of the value of £2 10s., given by the late Thomas Hyde Hills.

All entries must be in the hands of the Registrar on or before June 1, accompanied by the certificates, etc., required by the regulations under which the scholarships may be competed for and held.

Copies of these regulations can be had on applying to the Registrar, 17, Bloomsbury Square, London, W.C.

MANCHESTER PHARMACEUTICAL ASSOCIATION SCHOLARSHIP.

One scholarship will be offered for competition on June 17, 1902. The scholarship is of the value of about £26, which is expended for instruction in the Society's School, or some approved School of Pharmacy.

All entries must be in the hands of the Registrar, 17, Bloomsbury Square, W.C., on or before June 1, accompanied by the certificates, etc., required by the regulations under which the scholarships may be competed for and held.

Copies of these regulations may be had on applying to the Registrar, 17, Bloomsbury Square, London, W.C.

LIBRARY IN LONDON.

The Library in London will not be open in the evenings on Thursdays after the end of May.

LIBRARY CATALOGUE.

Members or Student Associates desirous of obtaining a copy of the new edition of the Library Catalogue should make application to the Librarian, 17, Bloomsbury Square, London, W.C.

AUSTRALASIAN NEWS.

The Pharmaceutical Society of Australasia held its forty-fifth annual meeting at the Melbourne College of Pharmacy on March 26, when the report and balance sheet were formally adopted, and an interesting address was read by the President, Mr. E. T. Church, who referred to the fact that during the past year ladies had for the first time in the Society's history been admitted as members, and stated that the Council of the Society had made arrangements for the delivery of a series of lectures on pharmacy during the materia medica course, without any extra charge to the students. Mr. Church also referred in appreciative terms to the good work done by Messrs. Woolnough and Cheshire in connection with the Australian Pharmaceutical Formulary, now in the Press, and to the success that had attended the efforts made to secure amendments of the proposed Commonwealth tariff. In the course of a general discussion Mr. E. H. Leete suggested that the Council might convene a meeting of the trade, not necessarily members of the Society, to consider what could be done to protect the craft from outside competition. The proposal was endorsed by Mr. Church, who considered that it would be an excellent plan to have a business committee formed from members outside the Council to look after matters of business interest. In proposing a vote of thanks to the President, Mr. Witt congratulated him on being the first Australian native to fill the chair, and on the able manner in which he had done so. The usual Conversazione was held in the evening, when the prizes for the year were distributed to the students by the Chief Justice, Sir John Madden, who has a happy knack of investing with interest any function in which he takes part.

The Pharmaceutical Society of New South Wales held its twenty-sixth annual meeting on March 25, when the balance-sheet presented showed that the income from subscriptions had increased, while the expenses had been lighter, the result being a surplus on the year's transactions. The President (Mr. Marshall) claimed that without making any great splash the Council had been working quietly in the interests of the craft. The new Commonwealth tariff had to a certain extent disorganised business, and the Council had considered it advisable to remain quiet until after that matter was finally settled. He thought the members expected too much from the Council, and unless pharmacists bestirred themselves, he was afraid they would have a bad time in the future. By working together they would prevent cutting each other's throats, and by co-operating in the matter of prices they would be better able to compete with the stores, which are at the present time, as a rule, in a position to buy on a better footing than the individual pharmacist. In reply to certain complaints with regard to the unsatisfactory provision made at the University for the tuition of pharmaceutical students, Mr. Brothwood (President of the Pharmacy Board) stated that the Board would perhaps be in a position to subsidise a lecturer on pharmacy if a class were established, but it was no easy matter to induce the University authorities to make that new departure. Mr. Mears explained the difficulties that had been experienced in coming to an understanding with Victoria in the matter of reciprocity, showing that Victoria was apparently determined not to reciprocate unless all the conditions it had formulated were conceded in full.

SCHOOL AND COLLEGE NEWS.

Westminster College of Chemistry and Pharmacy.—The conversazione of the college will be held in the King's Hall, Holborn Restaurant, on Friday, May 30. Any former student desirous of being present is requested to apply to the Secretary, Mr. J. E. Walden, for a ticket for himself and lady. Reception, 7.30.

Leeds College of Pharmacy.—The students and friends of this College, accompanied by the principal, Mr. F. Pilkington Sargeant, F.C.S., took their annual excursion to Windermere on Monday last. The party journeyed to the Lake District in a saloon in which breakfast was served soon after starting. Arrived at the lake, a steam launch was chartered, and a cruise round the lake enjoyed. One portion landed on the west bank, and spent the time investigating the flora of the district; whilst the rest proceeded to Ambleside, and drove from there to Grasmere and back. The first party were then picked up, and, after a sail to Lakeside, a return was made to Bowness, thence to Windermere station, a most pleasant day terminating in the ride home, Leeds being reached at midnight. Many interesting specimens were obtained, including the oak, beech, and maidenhair and spleenwort ferns, and the flowers of bog bean, broom, cherry laurel, with about fifty others.

SOCIETY AND ASSOCIATION NEWS.

Pharmaceutical Society of Great Britain.—The annual dinner of the Society will be held at the Whitehall Rooms, Hôtel Métropole, on Tuesday evening next, May 27, at seven o'clock, when the President, Mr. G. T. W. Newsholme, will take the chair. Members of the Society who have not yet applied for tickets should communicate at once with the Secretary, 17, Bloomsbury Square, W.C., if they desire to attend the dinner, otherwise their applications will be too late.

Edinburgh Chemists' Golf Club.—The "Gibson Handicap Medal" was played for during last week over the Braids, with the following results:—First, Mr. Duncan McLaren, 94 – 7 = 87; Mr. James Stott, 87 + 1 = 88; Mr. H. D. Alexander, 88 scratch; Mr. George Robertson, 100 – 12 = 88; tie for second, third and fourth places. There was a large turn-out. All the ties in the first round of the Hole-and-Hole Competition for the "Connell Smith Putter" have now been played. Undernoted is the draw for the second round:—Mr. P. R. Beattie against Mr. W. G. McNab, Mr. W. C. Baker against Mr. Geo. Robertson, Mr. Jas. Stott against Mr. J. A. Forret; Mr. Robt. McLaren against Mr. D. N. Wylie, Mr. Wm. Lyon against Mr. A. J. Dey, Mr. T. Miller against Mr. Jas. Finlay, Mr. A. F. Dawson against Mr. W. B. Cowie, Mr. Duncan McLaren against Mr. Jas. Anderson. Messrs. C. F. Henry and Geo. Lunan receive byes.

Plymouth, Devonport, Stonehouse and District Chemists' Association.—As an outcome of the proceedings at the last quarterly meeting (see *P.J.*, p. 447), a circular advocating Mr. C. J. Park's candidature at the forthcoming Council election has been sent to members of the Pharmaceutical Society in business in the south and west of England. It is therein pointed out that, as Mr. Park is the sole representative of a large district in the south and west, there are urgent reasons for supporting him on this occasion. Those who have been intimately associated with him for many years know the large amount of time and attention he has given to his duties, how intimately he is in touch with chemists' needs, and that as a retail chemist in ordinary business he fully realises the exigencies of the present position of the calling.

COMPANY INTELLIGENCE.

Liebig's Extract of Meat Company, Limited.—The directors have resolved to recommend at the next meeting, to be held on June 2 next, the distribution of a final dividend on the ordinary shares for the year 1901 of 15 per cent., making, with the interim dividend of 5 per cent. paid on February 15 last, 20 per cent. for the year.

Plymouth Co-operative Drug Company, Limited.—This company was registered on May 12, with a capital of £2,000 in £1 shares, to acquire the business of a chemist and druggist as now and heretofore carried on at 20, Cornwall Street, Plymouth, Devonshire, as the Plymouth Co-operative Drug Company. Directors: E. T. and H. E. Cocks and W. J. Manley. Registered office: 20, Cornwall Street, Plymouth.

Medical and Dental Defence Union of Scotland, Limited.—This company has been registered in Scotland without capital, members being liable to the extent of £1 each. Object, to protect, support, and safeguard the character and interests of legally qualified medical and dental practitioners, and to raise and defend actions in the name of any member or of the company, etc. Registered office, 65, Jamaica Street, Glasgow.

Lindsay's Drug Stores, Limited.—This company was registered on May 6, with a capital of £500 in £1 shares, to carry on the general business of chemists and druggists, drysalters, oil and colour men, importers and manufacturers of and dealers in and with any pharmaceutical, medicinal, chemical, industrial, and other preparations; manufacturers of and dealers in all kinds of electrical, chemical, photographic, surgical, and scientific apparatus and materials; to acquire and turn to account any patents, patent rights, and inventions. No initial public issue. Registered without articles of association.

Medical, Surgical, and Hygienic Exhibitors' Association, Limited.—This company was registered on May 12, as a company limited by guarantee and not having a capital divided into shares; for the purposes of the company, to consist of 100 members, each of whom undertakes to contribute towards the assets of the company in the event of winding up a sum not exceeding £1. Object, the holding of exhibitions which are of a medical, surgical, hygienic character; to co-operate with promoters or committees of like exhibitions, and to represent the interests of exhibitors; to negotiate with railway and other carrying companies with a view to obtaining reductions in fares and freights. Directors to be elected by the subscribers.

Durban Oil and Soap Company, Limited.—This company was registered on May 10, with a capital of £120,000 in £1 shares, to adopt an agreement made between the Société Française pour l'Industrie et les Mines of the one part and this company of the other part, and to carry on the businesses of oil and soap manufacturers, chemists, druggists, drysalters, etc. The signatories are:—W. Scott Henderson, 31, Lombard Street, London, E.C.; E. Mackintosh, 5, Adamson Road, N.W.; E. T. Ironside, 31, Lombard Street; O. G. Petersen, 82, Wood Vale, Forest Hill, S.E.; T. A. Phillips, 53, Borthwick Road, Stratford, Essex; C. H. Perry, 17, Winchester Road, Highams Park, Essex; E. J. Stevens, 32, St. John's Villas, Upper Holloway, N. There is no initial public issue. The first directors (to be not less than three nor more than seven) are to be elected by the subscribers. No qualification specified. Remuneration, £100 per annum each; remuneration of chairman, £150.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. E. Calkin, chemist, Salcombe, has been elected a member of the Urban District Council.

Mr. D. H. Oxen has closed his branch business at 99, Broad Street, Shelton. His head establishment is in Newcastle-under-Lyme, and he has also a branch establishment at Stoke-on-Trent.

Sir William Turner Thiselton Dyer, K.C.M.G., C.I.E., F.R.S., Director of the Royal Botanic Gardens, Kew, has been appointed Botanical Adviser to the Secretary of State for the Colonies.

Mr. Edwin B. Vizer, pharmaceutical chemist, has given up his business at 154, Marine Parade, Brighton, and does not intend to again enter into business on his own account; but, we understand, he will be willing to accept temporary engagements as *locum tenens*. Mr. Vizer, who has been connected with the Pharmaceutical Society since 1849, and is a life member, is now residing at 8, York Road, Tunbridge Wells.

Mr. George Peck, M.P.S., of 30, Trumpington Street, Cambridge, has been elected to a vacancy on the Aldermanic Bench of the Cambridge Town Council. Mr. Peck, who is in his seventy-sixth year, is the father of Mr. E. Saville Peck, M.A., one of the Pharmaceutical Society's Examiners. He joined the Society in the early years of its existence, and in 1851 commenced business for himself at Cambridge. He is a member of the local Board of Guardians, a director of the Cambridge Permanent Benefit Building Society, one of the Select Governors of Addenbrooke's Hospital, Hon. Secretary of the Council of the Cambridge District Nursing, and Hon. Treasurer of the Cambridge Provident Medical Aid Societies.

MARKET REPORT.

The articles quoted here have often to be sorted in order to suit the requirements of the retail pharmacist, and the quotations given are in all cases the lowest cash prices for bulk quantities. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London, Thursday, May 22, 1902.

We have again, partly, perhaps, as a result of the holidays and partly, no doubt, in consequence of the wretched weather for the season of the year, to report a very dull week, not only as regards Drugs and Chemicals, and one cannot shut one's eyes to the fact that business generally appears to be in a very unsatisfactory condition. Hope is now centred in the direction of peace, and everyone hopes that this happy event, once assured, will bring about a favourable and most welcome change all round. There are practically no changes of any great importance in prices to record, with the exception that price of Caffeine has been reduced. Price of Acid Carbolic has also now reached a very low level, and should be worthy of the attention of buyers. Bromides are firm, as far as one can write of firmness where everyone appears to be restricting purchases as much as possible. Iodides unchanged. Quicksilver and Mercurials steady, as also is refined Glycerin. Cod Liver Oil unchanged, full prices being still asked. Opium and Morphine dull and weak. Codeine steady at late reduction. Acetanilide still very weak. Sulphonal unchanged, while Phenacetin is being talked higher. Acid Citric and Acid Tartaric steady. Cream of Tartar firmer. Cinchona Bark went well at last week's auction in Amsterdam, while the Bark sale which is exceptionally being held to-day in London, instead of on a Tuesday as usual, is reported to be progressing favourably, the final results not, however, being known up to time of going to press. In spite of this, however, the speculative market in Quinine remains dull and weak, with sellers at nearly 2d. per oz. below makers' price. We give below some current quotations:—

ACID CARBOLIC.—Price has now reached a level at which moderate purchases would appear safe, on basis of 6⅛d. to 6¼d. per lb. for the 34°-35° C. ice crystal, in 2½ cwt. drums and overcasks, other qualities and packing being quoted at proportionate prices.

ACID CITRIC—Steady at 1s. 0¼d. to 1s. 0¾d. per lb., according to quantity and make, for crystals in 5 cwt. barrels.

ACID TARTARIC—Steady at 11¼d. to 11½d. per lb. for English and 10½d. per lb. for foreign.

AMMONIA SULPHATE—Firm, on basis of £12 12s. 6d. per ton for Grey, 24 per cent., London prompt.

ANTIMONY.—English Regulus is quoted £29 to £30 per ton, and Japan crude (Black Sulphide) £16 to £17 per ton.

ASHES.—Pots 25s. 9d., pearls 40s.

CAFFEINE.—On 20th inst. makers reduced price 1s. per lb. to 11s. 6d. per lb. for the pure alkaloid and the Commercial Citrate, and to 8s. 3d. per lb. for the Citrate B.P.

CINCHONA BARK.—At the auctions in Amsterdam on 15th inst., the fourth of the series, the smaller supply of 5,900 packages was offered, against 6,780 packages at the preceding sale, and 7,515 packages at the corresponding sale last year. There was good competition, and the bulk of the offerings changed hands at slightly better prices, the average unit obtained being 8·65 cents against 8·60 cents last sale and 10 cents at the corresponding sale a year ago. This result is equivalent to fully 1 9/16d. London parity. The Quinine contents of the sale were 24,047 kilos, of which only 2,615 kilos were bought in.

CODEINE.—Market is steady at late reduction to 10s. 8d. per oz. for the pure alkaloid, it being thought that price may very likely be advanced again before very long.

COD LIVER OIL.—The agents for the Norwegian refiners still ask fancy prices up to 110s. to 112s. 6d. per barrel for best new non-congealing Norwegian oil, in tin-lined barrels of 25 gallons. No one is, however, paying those prices, except those who are absolutely forced to buy, and even then purchases are only made on the from-hand-to-mouth principle.

CREAM OF TARTAR.—First white crystals are quoted 71s. 6d. per cwt. on the spot. Powder 73s. 6d., and ditto foreign 98 per cent. 75s. 6d. per cwt.

GLYCERIN—Is quiet but steady at unchanged price—viz., 67s. per cwt. for the best white odourless, double-distilled, chemically pure, 1·260 s.g. quality, in tins and cases. It is not thought that price will be lower in the immediate future.

LUBRICATING OIL.—Pale American spot quoted £5 12s. 6d. to £7 10s., Black £5 to £6. Russian Black £5 to £6, pale £6 15s. to £7 10s.

MENTHOL.—The article is being talked up; at the moment it is not possible to buy Kobayashi brand below 13s. 6d. per lb.

MORPHINE—Dull and weak in sympathy with the Crude drug, price being, however, nominally unchanged.

OILS (FIXED) AND SPIRITS.—Market excited at 10s. to 15s. advance. London spot pipes £33, barrels £33 to £33 5s., month £33, June-August £32 15s., September-December £31 15s. Hull naked spot £31 15s., June-August £31 10s., September-December £30 2s. 6d. Rape Oil firm. Ordinary Brown on the spot barrels £26, May-August £26, September-December £26. English Refined spot £27 10s. Ravison not offering. Cotton Oil firm. London Crude spot £25 15s. to £26, May-August £26. Refined spot £27 15s. to £28 10s. Hull naked refined spot £25 12s. 6d., May-August £25 15s., November-April £22 10s. Crude spot and to August £24 15s., November-April £21 7s. 6d. Olive Oil: Mogador £31 to £32, Spanish £32, Levant £31 to £32. Cocoanut Oil steady. Ceylon spot £33 10s. to £34, May-June £31 5s., c.i.f., June-July £31 5s. c.i.f., August-September £30 17s. 6d. c.i.f. Cochin spot £37, April-May £34 c.i.f., August-October £33 17s. 6d. c.i.f. Mauritius £33. Palm Oil: Lagos on the spot £29. Castor Oil firm. Belgian, spot firsts £26, seconds £23; July-December, firsts £25, seconds £22. Barrels free, ex wharf, London, 2½ per cent. discount. Hull made, guaranteed pure, September-December deliveries (equal monthly quantities), firsts £24 15s. per ton, seconds £23 15s. per ton, in barrels, delivered free, ex wharf, London, less 2½ per cent. discount. Fish Oils steady. Crude Sperm £50. Bottle-nose £31. Pale Seal £26. Newfoundland Cod £20 10s. to £21. Whale £24. Japan Fish £17 10s.

OPIUM—Very quiet, with a drooping tendency, with, however, no business passing in the article at the moment.

PARAFFIN WAX.—Crude 1⅞d. to 2d. Refined 3d. to 3¾d.

PETROLEUM OIL.—Russian spot quoted 6d. to 6½d. American spot 6¾d. to 7d., Water White 7¾d. to 8d. Refined Roumanian on spot 5⅞d. to 6d.

PETROLEUM SPIRIT.—American ordinary 8d., Deodorised 8¼d.

PHENACETIN—Is being talked up, but price is nominally unchanged at 4s. 2d. per lb. for crystals and powder in 10 cwt. lots.

PITCH.—7s.

QUICKSILVER—Is firm at £8 15s. per bottle from the importer, nothing being obtainable from second-hand below this figure.

QUININE.—Makers still quote 1s. 3d. per oz. for Sulphate B&S or Brunswick, for 1,000 oz. lots in 100 oz. tins, while in the speculative market these brands can readily be purchased, in limited quantity perhaps, at 1½d. per oz. below the above figure.

ROSIN.—Common strained spot 4s. 9d. ex wharf, June-Aug. and July-Sept. 4s. 3d. ex ship conditions.

SHELLAC.—There is a quiet, but steady, trade passing on the spot at full rates, TN Orange selling on a basis of 113s. for fair.

SODA NITRATE—Steady at £9 15s. per ton, for refined and £9 10s. for commercial.

SULPHONAL—Is unchanged, it being still possible to purchase Bayer's make in limited quantity at 5s. per lb. for both crystals and powder in bulk paper parcels.

TAR.—Stockholm 22s. 6d. Archangel 17s.

TURPENTINE.—Is more active at the slight decline. American spot 34s. 6d., June 34s. 3d. to 34s. 4½d., July-August, 33s. 4½d., September-December, 33s. 4½d., January-April, 34s.

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Pharmaceutical Journal

SPECIAL ISSUE,

MAY 31, 1902.

13,000 COPIES.

THE latest time for receiving displayed Advertisements is **Wednesday next, May 28.** All communications should be addressed to

THE PUBLISHERS,
8, Serle Street,
Lincoln's Inn,
LONDON, W.C.

MAY 22, 1902.

PUBLICATIONS RECEIVED.

KNOWLEDGE: An Illustrated Magazine of Science, Literature, and Art. Founded by RICHARD A. PROCTOR. Price 6d. January, February, March, and April, 1902. London: T. Thompson, 326, High Holborn, W.C. 1902. From the Publisher.

THE SUGAR-CANES OF MADRAS. By C. BENSON, M.R.A.C. Vol. II. Bulletin No. 46. Department of Land Records and Agriculture, Madras. 1902. Price 2 annas. Also a Report on the Operations of the Department for the Official Year, 1900-01. Madras: Government Press. 1902. From the Director.

REPORT OF THE PHARMACY BOARD OF VICTORIA FOR THE YEAR 1901. Medical Act 1890, Part III., and Poisons Act 1890. Melbourne: H. Hearne and Co., Paragon Printers, 208-210, Little Lonsdale Street. From the Registrar.

FAMILIAR WILD FLOWERS. By F. E. HULME, F.L.S., F.S.A., Part VII. Pp. 81-120, with ten plates. Price 6d. net. London: Cassell and Co., Limited. 1902. From the Publishers.

THE IDLER, May, 1902. Pp. 291-384. Price 6d. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. From the Publishers.

DIE ROHSTOFFE DES PFLANZENREICHES. By Dr. JULIUS WIESNER. Part 9. Pp. 481-640. Price M.5. Leipzig: Wilhelm Engelmann. 1902. From the Publisher.

DIARY OF THE WEEK.

Tuesday, May 27.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, Whitehall Rooms, Hotel Métropole, London, W.C., at 7 p.m.—Annual Dinner.

ROYAL PHOTOGRAPHIC SOCIETY, 66, Russell Square, London, W.C.—"Clouds, and the Photography of Clouds," by Captain D. Wilson-Barker; also an Exhibition of Photographs, by W. Smedley Aston. Visitors are invited.

Wednesday, May 28.

NOTTINGHAM AND NOTTS. CHEMISTS' ASSOCIATION, Victoria Hotel, at 9 p.m.—Annual Meeting for Election of Officers and Other Business.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, London, W.C., at 11 a.m.—Meeting of the Council; followed at 12 o'clock by the Sixty-first Annual General Meeting, and later by a Special General Meeting.

CHEMICAL SOCIETY, Burlington House, Piccadilly, W., at 5.30 p.m.—Papers on "Taxin," by T. E. Thorpe and G. Stubbs; and "Soil Samples" and "Some Excessively Saline Indian Well Waters," by J. W. Leather.

PUBLIC DISPENSERS' ASSOCIATION, St. Bride's Institute, Ludgate Circus, E.C., at 8 p.m.—Last Meeting of the Session; Paper on "Some Aspects of a Dispenser's Duties," by H. D. Kelf.

Thursday, May 29.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, London, W.C., at 3 p.m.—Adjourned Annual Meeting for the Declaration of the Poll.

BRITISH OPTICAL ASSOCIATION, Trocadero Restaurant, Shaftesbury Avenue, London, W., at 7.30 p.m.—Second of a Series of Optical Discussion on Subjects concerning Refractionists.

Friday, May 30.

ROYAL INSTITUTION, Albemarle Street, Piccadilly, W., at 9 p.m.—"The Progress of Electric Space Telegraphy," by G. Marconi.

WESTMINSTER COLLEGE OF CHEMISTRY AND PHARMACY, King's Hall, Holborn Restaurant, W.C., at 7.30 p.m.—Annual Conversazione.

TRADE NOTES AND NOVELTIES.

THERAPEUTICAL NOTES ON NEW REMEDIES AND SPECIAL PHARMACEUTICAL PREPARATIONS.—Messrs. C. J. Hewlett and Son have published, in book form, a series of therapeutical notes, compiled by Mr. E. J. Millard. The little book has been favourably received by the medical profession, and the contents should prove of interest to pharmacists.

MALT OVA is an excellent preparation of egg combined with malt extract, and is very palatable and of good diastasic power. It is quite miscible with water, yielding a slightly milky liquid. Analysis gave the following results:—

Egg (expressed as dry egg)	*21·6
Malt extract (dry)	53·6
Water	24·8
	100·0

*Includes also a proportion of the albuminoids of malt.

Since eggs contain 70 to 75 per cent. of water, malt ova is evidently a very concentrated preparation of egg and malt extract.

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

J. Coley and Sophia Gay, trading under the style of S. J. Coley, chemist and druggist, Stroud, and at Nailsworth, Glos.

Robert Stanley, Frank Stanley Bellamy, and Harry Christian, trading as "The Crown Chemical Company," 35, Newarke Street, Leicester.

John Matthews Elliott, Senior, Walmsley Crabtree, and John Matthews Elliott, Junior, gum and starch manufacturers, 10, Marsden Street and Richard Street, Miles Platting, Manchester.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Addiscott, Baker, Barrass, Brittain, Cochrane, Cole, Dickson, Dowdy, Eberlin, Harrison, Hewlett, Hill, Hodge, Holmes, Houghton, Keift, Lyon, Mallan, Morgan, Mumbray, Oxen, Reynolds, Roper, Russell, Samuel, Sargeant, Stedman, Stoman, Sutcliffe, Vizer, Walden, Whineray, Williamson.

Pharmaceutical Journal

SATURDAY, MAY 31, 1902.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

ASSISTANT or IMPROVER wanted; two kept.—State usual particulars and enclose photo to G. CRAWSHAW, Hyde Park, Leeds.

IMMEDIATELY, ASSISTANT; 22 to 25; personal application preferred, or if by letter, give full particulars and state salary expected.—WINDLE, 452, Edgware Rd.

PLUMSTEAD, S.E.—Wanted, Junior ASSISTANT, for good-class Retail and Photographic trade; outdoors.—A. GOLDTHORPE, Chemist, 70, Herbert Rd., Plumstead.

PIERCE, TULLEY & Co., late The General Apothecaries' Co., 16, Bishopsgate St. Within, E.C., require immediately a qualified JUNIOR; outdoor; personal application only.

CHARD.—Gentlemanly Junior ASSISTANT; indoors; comfortable home; good-class Country business.—Apply, with usual particulars, enclosing photograph, to W. H. SMITH, Chemist, Chard.

LONDON, W.—A West End Dispensing house requires a qualified ASSISTANT of good training and experience of high-class trade; outdoor.—State full particulars to PHARMAKOS, Pharm. Journal Office, 8, Serle St., W.C.

WANTED, a smart qualified ASSISTANT (second of three) for West End of London.—Give full particulars, including experience, references, and salary required (indoor), ACACIA, Pharm. Journal Office, 8, Serle St., W.C.

ASSISTANT wanted at once, with experience in select Dispensing establishment, and qualified; two kept.—Apply, stating experience, salary required (indoors), &c., WHISTON & Co., Chemists, St. James's Sq., Bath.

LONDON (Suburb), S.W.—Wanted, Qualified married ASSISTANT, to live on premises, for high-class pharmacy; comfortable and permanent berth to suitable man.—SENIOR, Messrs. Barron Harveys and Co., Giltspur St., E.C.

WANTED, a competent qualified ASSISTANT (indoors); two kept; must be accustomed to first-class Dispensing business.—Apply, stating salary and usual particulars, to J. SELLEY, 142, Earl's Court Rd., South Kensington, S.W.

WANTED, for the end of second week in June, a qualified ASSISTANT, about 25 or 26, accustomed to first-class pharmacy; must be a neat and accurate Dispenser and a good Counterman.—J. BLETSOE, Chemist, Richmond, Surrey

HAROLD E. MATTHEWS, Pharmacist, Clifton, Bristol, requires a JUNIOR (indoors), accustomed to good-class provincial business.—Please send full particulars as to experience, age, height, and salary required, and a recent photograph in first letter.

Assistants Wanted—Continued

WANTED immediately, an ASSISTANT, capable of managing branch, in a South Wales colliery district; Welsh preferred; abstainer; hours easy; no Sunday duty.—Apply, with full particulars, to CHEMIST, Pharm. Journal Office, 8, Serle St., W.C.

EXPERIENCED Junior ASSISTANT, about 23, for season; must be good Dispenser and accustomed to high-class business.—Apply, with full particulars of age, experience and salary, enclosing photo if possible, to T. E. HANDFORD, Pharm. Chemist, Station Bridge, Harrogate.

BULUWAYO.—A qualified ASSISTANT required for leading pharmacy; age about 25; must have excellent references and be well up in Dispensing; salary, £300 per annum; bedroom found; second-class passage paid; usual three years' agreement. —Apply, E. J. M., Hewlett & Son, 40, 41 & 42, Charlotte St., London, E.C.

WANTED, a STUDENT-ASSOCIATE desirous of seeing the actual working of a pharmacy business in a densely-populated neighbourhood, with a view to succession or otherwise; attendance regularly at stated hours to suit his own convenience; terms also mutually adjustable.—J. C. H, 39, Church St., Marylebone, London, N.W.

CAPE COLONY.—Wanted, qualified ASSISTANT, of good experience and having undeniable references; aged about 23; salary, 1st year, £12 per month; 2nd year, £13 per month; 3rd year, £14 per month; sleeping accommodation provided; second-class passage paid out; 3 years' agreement.—Apply, COLONY, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

CALCUTTA.—Wanted at once, a qualified ASSISTANT; age about 24 years; must be able to conduct analysis; first-class opening for a competent man. Salary, 1st year, 275 Rs. per month; 2nd year, 300 Rs. per month; 3rd year, 325 Rs. per month, and 4th year, 350 Rs. To a candidate of exceptional experience the salary will be increased. 4 years' agreement. Second class passage paid both ways.—Apply by letter to CALCUTTA, c/o Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

SOUTH AFRICA (healthy coast town).—At once, two qualified ASSISTANTS required, one for the Wholesale and the other for the Retail. Must be thoroughly reliable, competent, steady, and of sober habits; latter most essential. Scotchmen preferred; aged from 21 to 25; Minor qualification. For the Wholesale, the Assistant must have had previous experience. For the Retail, the Assistant must have had first-class Dispensing and Retail experience. Salary, 1st year, £13 10s. per month; 2nd year, £14 10s.; 3rd year, £15 10s.; without board and outdoor (sleeping accommodation provided, conditionally, for Retail Assistant). Second-class passage paid out, and allowance on board. Three years' agreement.—Address, SOUTH AFRICA, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

Assistants Wanted—Continued

STRAITS SETTLEMENTS.—Good opportunity for qualified Assistant; healthy climate. Salary, £16 per month first year, £18 10s. per month second year, £21 per month third year; three years' agreement; second-class passage paid out and back; preference will be given to Scotsman; age about 23; must have some knowledge of book-keeping, and a total abstainer preferred; also had good experience.—Apply, with full particulars, to Straits Settlements, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

THE ROYAL HOSPITAL FOR DISEASES OF THE CHEST,
City Road, E.C.

DISPENSER required, must have the Major or the Minor Pharmaceutical qualification; commencing salary £100 per annum, increasing £5 per annum to £120; similar experience a recommendation.

Applications and testimonials to be sent to the Secretary, at the Hospital.

May 29th, 1902.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM; good, varied experience.—M.P.S., 61, Clement St., Accrington.

LOCUM; qualified; abstainer.—E. Kemp, 11, Cheapside, St. Leonards-on-Sea.

QUALIFIED; disengaged; Manager or Assistant.—C. E. Day, Burton Joyce, Notts.

TEMPORARY; 31; qualified; experienced; disengaged. —Statim, 49, Abbey Rd., N.W.

REPRESENTATIVE; 30; 5 years' experience; good references.—B., 47, Ritherdon Rd., Balham.

TEMPORARY or otherwise; abstainer; good reference.—Pharmacist, 107a, Aslett St., S.W.

ASSISTANT; 21; West End or South Coast (outdoors).—Williams, 30, Rosslyn Hill, Hampstead.

LOCUM TENENS; 26; qualified; first-class experience.—T. W. White, Ballingeich, Stirling, N.B.

LOCUM; Dispenser; minor qualification; disengaged June 12th.—Longley, Torrehill Rd., Torquay.

MANAGER or Locum; Minor; long experience; good reference.—Phenacetin, 156, Barking Rd., E.

PART-TIME; good references.—Hours and salary to Aconite, Pharm. Journal Office, 8, Serle St., W.C.

QUALIFIED; 30; Senior or Manager; first-class experience.—Apply, Strong, Stanhope, Co. Durham.

DISENGAGED June 28th; qualified; 25; West End preferred.—H. W., 225, Railton Rd., Herne Hill, S.E.

ASSISTANT; qualified; 22; experienced; good references; photography.—A. E., 425, Chorley Old Rd., Bolton.

ASSISTANT; 25; high-class Dispensing experience; seaside or West End.—A. D., 225, Railton Rd., Herne Hill, S.E.

GERMAN; qualified Pharmacist; speaking French; best references; willing to give a month.—A. B., 74, Mildmay Park, N.

DISPENSER (Lady); qualified; holiday or permanent engagement.—Bismal, Pharm. Journal Office, 8, Serle St., W.C.

LOCUM; Manager; qualified; thoroughly experienced; well recommended.—Davison, 49, Upper Lewes Rd., Brighton.

Engagements Wanted—Continued

LADY (Minor qualification) seeks appointment as Dispenser in Hospital or Pharmacy.—Dispenser, Pharm. Journal, 8, Serle St., W.C.

MANAGER; qualified; 25; past experience of management; good Prescriber; good references; disengaged.—M.P.S., 153, Victoria Rd., Headingley, Leeds.

WEST AFRICA.—Young Scotchman seeks Situation; experienced; unqualified.—Plumb Rule, c/o McGregor, 91, Listria Park, Stoke Newington, N.

MANAGER or Senior; qualified; 27; exceptional first-class experience; highest references.—Apply, Aristol, Pharm. Journal Office, 8, Serle St., W.C.

LADY CHEMIST (Minor qualification) desires post in Laboratory of Manufacturing Chemist, or the like.—F. W. L., Pharm. Journal Office, 8, Serle St., W.C.

LOCUM; qualified; excellent experience and references; has three weeks (whole or part) vacant from June 20th; abstainer; 26.—Kerruish, Richmond College, S.W.

LOCUM TENENS or Temporary Assistant; minor; aged 30; good class trade in Southern Counties preferred; disengaged June 30th.—Address, Hawes, 89, East St., Chichester.

ASSISTANT; outdoors; experienced Dispenser, Photographic; 30; tall; permanency or seaside season; unqualified.—Quinol, 170, The Grove, Hammersmith, London, W.

WHOLESALE; Surgical Instruments, Druggists' Sundries; situation desired; 28; married; Retail and Surgeon's Dispensing experience.—W., 123, Saltram Crescent, Paddington.

DISPENSER and Book-keeper to Surgeon, Chemist, Dispensary or Institution; mornings, evenings; part time or otherwise; qualified; experienced; excellent references. —Salicine, 8, Serle St., W.C.

LOCUM, Branch Manager or Senior; qualified; 37; store experience and West End; Extractor, Prescriber, and knowledge of Photography; excellent references; disengaged.—Statim, 140, Kennington Park Rd.

For Sale

EXCEPTIONAL OPPORTUNITY.—For immediate Disposal, a bargain, 200 Shares of £1 each (will divide) in Established Industrial Company that has for years paid regular dividends of 10 per cent. per annum; half-year's dividend due next month.—Address, Shares, 21, Nicholas St., Bristol.

Shop Fittings for Sale

DISPENSING SCREEN, mahogany, 6 ft. long, very handsome design; top and bottom portions complete; bevelled centre mirror, marble slab, sponge cage, side cases, counter shelves, drawers, etc. Top side cases lined with silvered plate and fitted with rounded edge glass shelves; £16 15s. net. Write us for prices of any chemists' fittings required.—Ayrton & Saunders, Chemists' Shop Fitters, 57, Parr St., Liverpool.

CHEMISTS WHO WISH
to make Up-to-date Improvements, Alterations, &c., would do well to consult

H. MILLS, Shopfitter, Shop Front Builder, &c.

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CHEAP HOUSE for Window Enclosures, Drug Fixtures, Wall Cases, Dispensing Screens, Glass Facias, Stall Plates, &c.

Chemists fitted complete. Estimates Free.

Businesses for Disposal

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SHEFFIELD.—Old-established BUSINESS, in a busy thoroughfare; present proprietor retiring on account of failing health; corner shop. –For particulars, apply H. E. IBEITT, Chemist, 76, Meadow St., Sheffield.

LONDON (North).—Old-established; same hands 16 years; returns £900; gross profits £400, under management; owner retiring; good house and shop; books shown; large stock; lease granted, at £56 a year, for 21 years; price £800, or near offer.—T. N., Pharm. Journal Office, 8, Serle St., W.C.

GRATIS.—Modern SHOP in London, S.E., fitted as Chemist's, cost £100, with small amount of stock; owner going abroad; rent £65 per annum, on lease, which may be terminated in 4 or 18 years by tenant; new estate being developed opposite. —Apply, CINCHONA, Pharm. Journal Office, 8, Serle St., W.C.

BLACKPOOL.—Chemist and Photographic STOCK and FIXTURES, new last year, to be Disposed of, proprietor having Medical Army Appointment; the shop, which is in best part of Blackpool, South Shore, can be had; low rental, £20. —CROSHER, 1, Kensington Buildings, South Shore, Blackpool.

HARROGATE.—Dispensing BUSINESS, with small Photographic, for Disposal; upwards of 5,000 prescriptions; returns exceed £1,200; centre of town; well-stocked shop; several good paying specialities; price only £950. Particulars to *bonâ fide* applicants.—X.Y.Z., 5, Dragon Parade, Harrogate.

HULL.—Dispensing and light Retail BUSINESS for Disposal, on pleasant main road; growing district; returns £500; handsomely fitted, double-fronted shop; good house, with private entrance; rent £44, on 3 years' lease, renewable; easy terms.—Apply BERBERIS, Pharm. Journal Office, 8, Serle St., W.C.

MID-WALES.—Good general country family and agricultural BUSINESS; good weekly markets; absolutely cash; turnover between £800 and £900, capable of extensive increase; opening for Dentistry and wine and spirit licence; good useful stock, £550.—WALES, Pharm. Journal Office, 8, Serle St., London, W.C.

COUNTRY.—Retail Prescribing and Dispensing CASH BUSINESS; established 16 months; returns first year £206, last 4 months average £262; nearest chemist four miles; surrounding population 2,700; neat shop, well stocked; good house and garden; rent £19; apartments let £26; price £150; no agents. —M.P.S., Pharm. Journal Office, 8, Serle St., W.C.

MONTGOMERYSHIRE.—Old-established Chemist's BUSINESS, in good market town, situated in best position of principal street, together with or without freehold premises, large house and garden; excellent opportunity for energetic young man; dentistry could be made a desirable addition.—Full particulars from PHARMACIST, Pharm. Journal Office, 8, Serle St., W.C.

GLASGOW AND VICINITY.—Increasing Wholesale and Retail Drug and Sundries BUSINESS; excellent opportunity for capable man; no limit to the possibilities. Also Retail BUSINESS, Prescribing, Dental, Photographic; Doctor in connection, purchaser receives his entire support; situation unapproachable; will sell jointly or separately; reason for disposal, seller confining his attention exclusively to manufacturing; cash required, £1,500—£2,000, according to arrangement; none but *bona fide* purchasers need apply.—SUCCESSFUL, Pharm. Journal Office, 8, Serle St., W.C.

FOR immediate cash offer or otherwise.—Modern BUSINESS a few miles from town, doing £1,300 and improving; sound premises on 21 years' lease; good Dental opening; ample stock, with some Photographic and fully-fitted dark room; narrow frontage; house with latest arrangements; price £850.—6, Winchester Terrace, St. Margarets.

CHEMISTS' TRANSFERS.

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56, LUDGATE HILL, E.C.

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PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

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VENDORS saved time and trouble by consulting before offering for sale PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address,* "TOMTOM."

Messrs. BERDOE & CO.

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35, JEWRY STREET, FENCHURCH ST., CITY

J. FLOYD,

Chemists' Valuer & Transfer Agent,

BURY ST. EDMUNDS.

Moderate Terms. Personal Attention.

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Books Audited and Balance Sheets prepared.

Stocktakings made periodically.

JUDD & MANNERS

Accountants.

Chemists' Valuers, Transfer Agents.

76, CANNON ST., LONDON, E.C.

TO STUDENTS.

I HAVE comfortable LODGINGS TO LET, on very reasonable inclusive terms; situate between Watson Will's and Muter's schools, and only a penny ride to any part of City or West End.—Apply early, 15, Methley St., Kennington Park Rd.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Offers for 4 doz. Welch's Invalid Port; Non-Alcoholic.—Ryley, Lowgate, Hull.

Set plain large Drawers, about 1 yard long, 18 to 20 inches deep.—Stanley, Southwell.

Wanted.—Check Till (British, Stoke's or Eclipse preferred).—Gentian, 8, Serle St., W.C.

McClinton's Soap, ½-pounds; any quantity to ½ cwt.—Cherrett, Monkwearmouth.

Platinum; disused utensils and scraps.—P. Rowsell, 9, Derwent Grove, Dulwich.

Squire's "Companion," Newth's "Inorganic," Lowson's "Botany," Everett's "Physics," Muter's "Analysis," Wills's "Pharmacy," Knight's "Pharmacy"; condition and lowest price.—Romal, 1, Antill Rd., Bow, E.

OFFERED.

Two Iron Presses, 6-pints and 2-gallons.—Metcalfe, Chemist, Hull.

Gross 1s. Leath Ross's Homœopathics, 2½d. each.—Rhei, 8, Serle St., W.C.

Welch's Invalid Port, Communion Wine, large; Keen's Corn Cure.—Eastman, Chemist, Stratford.

Forty 1s. Munyon's Remedies, assorted; what offers?—Frowde, Chemist, Douglas.

Heather Honey, superior flavour, 8d. lb. Sample 2d.—Hill, Falmouth Rd., Sheffield.

What Offers?—Scott's, Hayward's, Remsen's, &c.; Journals, '98, '99.—Jackson, Chemist, Sandiacre.

Earl's Food, 1 gross 1s. tins; good condition; 5s dozen or offer.—Chemist, 41, Union St., Plymouth

Photographic Mounts.—500 assorted job slip-in mounts, 10s.—Edward Peck, East Dereham.

Selecta e Prescriptis, as new; what offers?—Gowen, Fleet, Hants.

2 × 100 gall. Steel Cylinders for Nitrous Oxide Gas, 35s.; 2 × 50 gall., 32s., cash.—399, Stanley Rd., Liverpool, N.

12 doz. bone-handled table knives, 96s.; in dozen lots, 8s. 3d.; money returned if not approved.—E. L. Wing, 9, Ranby Rd., Sheffield.

"The Lancet."—26 large well-bound volumes, 26s. 9d.; or Exchange Medical Pharmaceutical Lectures.—76, Sleaford Rd., Boston.

Chemist's Mineral Water Plant, complete; worked by hand; for syphons; perfect condition; £25.—Merchant & Co., Shakespeare St, Southport.

One each, £4 4s., £5 10s., £6 10s. gramophones, all in good condition; also 60 2s. 6d. records; offers wanted in cash or saleable patents.—Vincent, 460, Holloway Rd., N.

For Sale.—150 Idris "B" (7 per cent. minimum) shares, with half-year's dividend just due, 23s. each; will divide.—O., 39, Quentin Rd., Lee, S.E.

OFFERED—*Continued.*

Journals.—Unique opportunity of purchasing last 10 years'; bound half-leather; 16 volumes at 3s., or offer.—G., 8, Narbonne Avenue, Clapham Common, S.W.

Twelve extracting forceps, elevator and lancet, in mahogany case; will accept 50s.; also mahogany chair, with head rest, £2 2s.—H. Midgley, Aireview, Silsden, Keighley.

Taylor's "Medicine," 4th Edition, 5s.; Walsham's "Surgery," 5th edition, 5s.; Bentley's "Botany," 5th edition, 5s.; all in good condition.—Harrison, 116, Abbeydale Rd., Sheffield

Recipe.—Anæmia.—Copy of prescription for the cure of anæmia by a leading physician, renowned for his successful treatment of this complaint; P.O. 1s.—Address, Mr. J. Hardy, 14, Percy St., Hull.

Medical Books.—Dozen volumes Taylor's "Medical Jurisprudence," Habershon's "Stomach," Churchill's "Midwifery," &c.; published about £7; 15s., or Surgery drugs.—136, Great Portland St.

Pharmaceutical Journals, July, 1861, to June, 1870, unbound, six numbers missing, three duplicates; July, 1870, to June, 1884, half-bound; July, 1884, to present, about twelve numbers missing; Year-Books, 1870 to 1895; cash offers.—Jones, 86, The Parade, Leamington.

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British Pharmaceutical Conference.—Meets once a year, about the beginning of August, to promote the advancement of science and the improvement of pharmaceutical knowledge, as well as to foster good fellowship among its members. The membership is open to all persons interested in pharmacy. The annual subscription of 7s. 6d., payable July 1, entitles members to attend the annual meeting, and to receive a copy of the 'Year-Book' annually. President for 1902, Mr. G. Claridge Druce, M.A. Oxon.; Secretaries, Mr. Francis Ransom and Mr. E. Saville Peck, M.A. Cantab. Address, the Assistant Secretary, 17, Bloomsbury Square, London, W.C.

Jenner Institute of Preventive Medicine, Grosvenor Road, London, S.W., is a richly-endowed institution, devoted mainly to bacteriological work and the preparation of pure animal medications—*e.g.*, various serums.

The Chemical Society of London is the parent chemical society of the world. A candidate for election as a Fellow must send to the Secretaries a certificate stating his name, address, profession, and qualification. Under "qualifications" should be given a concise statement of the candidate's contributions to science, as investigator or author, or of his position and past experience as lecturer, teacher, assistant or student, or in connection with analytical or manufacturing chemistry. If the candidate's qualifications are not included under any of the above heads the reasons for his desiring admission to the Society must be stated. The certificate must be signed by five or more Fellows, of whom at least three must certify their recommendation from personal knowledge. Election is by ballot, after the certificate has been read at three meetings of the Society. Every Fellow has the right to be present and to vote at all meetings of the Society, and to propose candidates for admission, and is entitled to one copy of the publications issued, and to the use of the books in the library. Fellows also have the privilege of introducing two visitors at the ordinary meetings of the Society. Admission fee, £4; annual subscription, £2, due January 1; life composition fee, £30. Meetings are held on the first and third Thursdays, at 8 p.m., from November to June. An occasional meeting at 5 p.m. on Wednesdays is contemplated. Apply to the Assistant Secretary, Mr. Robert Steele, Burlington House, Piccadilly, London, W.

Dermatological Society, 11, Chandos Street, Cavendish Street, London, W.

General Medical Council.—This Council has powers to deal with medical education and registration. Registrar for England, Mr. H. E. Allen, LL.B., B.A., 299, Oxford Street, London, W.

Geological Society, Burlington House, Piccadilly, London, W.—Address, the Secretary.

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Institute of Chemistry.—The Fellowship of this Institute is obtained, except in special cases, by examination. Full particulars of the examinations, etc., were given in the Educational Number of the *Pharmaceutical Journal*, September 14, 1901, on page 17 of the Supplement. Students of the Institute pay an annual registration fee of 5s.; intermediate examination for Associateship, £3 3s.; final examination for Associateship, £4 4s.; special examination (open to Fellows and Associates), £2 2s.; entrance fee to the Fellowship, £4 4s.; annual subscription for Fellows and Associates, £1 1s.; life composition fee, £16 16s. The F.I.C. certificate being recognised by the Local Government Board as evidence of qualification for appointment as public analyst, the Fellowship of the Institute is practically an essential for those desiring such appointments. Professor J. Millar Thomson, F.R.S., is the President; Mr. Richard B. Pilcher, 30, Bloomsbury Square, W.C., the Secretary.

Institution for Nurses for Nervous and Mental Disorders, 1, Culross Street, Grosvenor Square, London, W.

Linnean Society of London.—Candidates for the Fellowship must be proposed by three or more Fellows, who shall certify from personal knowledge his qualifications, Christian name, surname, rank, profession, and residence. Admission fee, £6; annual contribution, £3; composition fee, £45. Fees due May 24. Fellows are entitled to a copy of all publications of the Society and to the use of the library. Fellows may introduce a friend to the ordinary meetings, which are held on most first and third Thursdays from November to June, at 8 p.m. Address, Mr. T. E. Harting, Assistant Secretary, Linnean Society, Burlington House, Piccadilly, London, W.

London Chamber of Commerce, Botolph House, Eastcheap, London, E.C.

London Commercial Sale Rooms, Limited, Mincing Lane, London, E.C.—Sales are held on certain Thursdays in the forenoon.

Pharmaceutical Society, 17, Bloomsbury Square, London, W.C. (Secretary and Registrar, Mr. Richard Bremridge).—The particulars of membership, etc., can be obtained by application to the Secretary.

Physical Society of London.—The headquarters are at Burlington House, Piccadilly, W. Meetings are held on Friday evenings in the rooms of the Chemical Society.

Röntgen Society, 20, Hanover Square, W. (Hon. Secretary, Mr. F. H. Low, M.B., 12, Sinclair Gardens, W.).—The objects of the Society are to discuss the Röntgen Rays in their relation to medicine, the arts and sciences; to exhibit apparatus and methods, to provide a museum, library, and Röntgen Ray appliances, and to publish transactions. Candidates for membership must have shown some scientific interest in the subject. Election is by ballot. Meetings are held monthly. Annual subscription, £1 1s.; life subscription, £15 15s.

Royal Agricultural Society, 13, Hanover Square, London, W.

Royal Botanic Society.—The gardens of this Society are in the inner circle, Regent's Park, London, N.W. Candidates for the Fellowship must be nominated by one Fellow, and are entitled to free admission to the gardens, which are tastefully laid out. The attractions include numerous palm houses, a house and garden of medicinal plants, a lake, a winter garden, museum, library, and lecture-room. There are numerous special shows of chrysanthemums and other flowers throughout the year, and during the London season a military band plays on the lawn on Wednesdays. Numerous attractive garden *fêtes* are held in the summer evenings. A club-house is provided for Fellows. Lectures are delivered on botanical subjects. Fellows pay an entrance fee of £5 5s. and an annual subscription of £2 2s., or one payment of £26 5s. for life. Members pay £1 10s. annually, or £15 15s. for life; no entrance fee. Fellows have the extra advantage of books of tickets admitting two friends to the gardens on all occasions, except on *fête* days.

Royal College of Physicians, Pall Mall East, London, S.W.

Royal College of Surgeons, 39-43, Lincoln's Inn Fields.—The examination department of these two colleges is on the Victoria Embankment, London, W.C. Address the Secretary, Mr. F. G. Hallett.

Royal College of Veterinary Surgeons, Great College Street, Camden Town, London, N.W.

Royal Horticultural Society, 117, Victoria Street, London, S.W.

Royal Institution of Great Britain, Albemarle Street, Piccadilly, W. (Assistant Secretary, Mr. Henry Young).—The chief objects of this Institution are to promote scientific and literary research, to teach the principles of inductive and experimental science, to exhibit the application of these principles to the arts, and to afford opportunities for study. The chemical and physical laboratories, which are magnificently equipped with apparatus, have been the birthplace of the principal researches of Thomas Young, Humphry Davy, Faraday, Tyndall, Frankland, Dewar, Rayleigh, and other eminent experimentalists. A prominent feature of the work of the Royal Institution is the various courses of lectures on all branches of science, literature, the fine arts, and music, as well as on subjects of general interest. These are held between Christmas and June. Candidates for admission must be proposed by four members; election is by ballot; the admission fee is ten guineas, and the annual subscription five guineas, or one payment of sixty guineas may be made on election. Members have the use of library, reading and writing rooms, and may admit friends to lectures under certain conditions. Non-members are admitted to all the courses of lectures in a session on payment of two guineas. Further particulars may be obtained from the Assistant Secretary.

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* N.B.—Intending candidates for admission to any Society should write to the Secretary for a form of application.

Royal Meteorological Society, 70, Victoria Street, London, S.W.

Royal Microscopical Society, 20, Hanover Square, W. (Assistant Secretary, Mr. F. A. Parsons).—This Society was established for the promotion of microscopical and biological science. Ordinary Fellows are elected on a certificate of recommendation signed by three ordinary Fellows, setting forth the usual particulars as to name, residence, etc. Election is by ballot. Admission fee, £2 2s.; annual subscription, £2 2s.; composition fee, £31 10s. Meetings are held at eight p.m. on the third Wednesday in each month from October to June. Visitors are admitted by the introduction of Fellows. The journal, containing the transactions of the Society and a summary of current researches relating to zoology, botany, microscopy, etc., is published bi-monthly, and is forwarded post free to Fellows. The library, with the instruments, apparatus, and cabinet of objects, is open for the use of Fellows daily (except Saturdays) from ten a.m. to five p.m.

Royal Photographic Society of Great Britain, 66, Russell Square, W.C. (Assistant Secretary, Mr. A. W. W. Bartlett).—The aim of this Society is the advancement of photography. Meetings are held on Tuesdays from October to June, those on the third Tuesday in each month being devoted to photo-mechanical processes, and those on the first Tuesday in each month to lantern lectures. An exhibition is arranged every autumn at the New Gallery, Regent Street, London, W., at which are included selected photographs, apparatus, and materials. The journal is published monthly, and includes abstracts of the most important photographic work throughout the world. There is a museum and a library of 1,500 volumes. Anyone who is interested in either the science or the art of photography is eligible for election as an ordinary member. The Fellowship is open only to those members who are able to satisfy the Council that they have ability in one or other of the many branches of the subject, and they have a right to place the letters F.R.P.S. after their names as an indication that their ability has been acknowledged by the Society. Members pay an entrance fee of one guinea, unless they have been members of an affiliated society for at least two years. An annual subscription of one guinea is payable by ordinary members, and two guineas by Fellows. The life subscriptions are ten and twenty guineas respectively. Members have the right of attending all meetings of the Society, and of introducing two visitors to each; they have free admission to the exhibitions of the Society, a number of tickets for their friends, and additional tickets may be purchased at half-price. They receive gratis all publications of the Society, have the free use of the dark rooms, library, and other accommodation, as well as of numerous other dark rooms in this country and abroad. Nomination forms must be signed by two members of the Society. Candidates who are not acquainted with any members should communicate with the Secretary, who will endeavour to arrange for their introduction. (N.B.—This is the rule in most societies.)

Royal Society.—This Society, the pioneer of all the learned societies, stands on a somewhat different footing from all others, for the membership is regarded essentially and entirely as a recognition of special distinction in some branch of science, whereas in many societies the membership is simply a question of paying fees. The Fellowship of the Royal Society is an honour bestowed only on the leaders of science, and as such is much desired by scientific men. It is difficult of attainment. Candidates must be proposed and recommended by a certificate, stating the name, address, rank, profession, and qualification, and signed by six Fellows of the Society, three of whom must certify their personal knowledge of the candidate's fitness for the honour. The certificate must reach the Assistant Secretary (Mr. R. W. F. Harrison), Burlington House, Piccadilly, W., not later than the first Thursday in March. Election is by ballot; personal canvassing is not allowed. Fellows pay an entrance fee of £4, an annual subscription of £2, or a life composition fee of £30. Meetings are held at four p.m. on Thursdays from November to June.

Royal Society of Edinburgh.—Ordinary Fellows residing in Scotland pay an admission fee of two guineas and a yearly subscription of three guineas for ten years, and afterwards two guineas yearly for another fifteen years. Ordinary Fellows not resident in Scotland pay £26 5s. on admission. Ordinary Fellows receive the publications of the Society gratis. Candidates for admission as ordinary Fellows shall make an application in writing and produce a certificate of recommendation signed by at least four ordinary Fellows, two of whom shall certify their recommendation from personal knowledge. Election is by ballot. Meetings are held on the first and third Mondays of every month from November to March, with certain exceptions. The Society possesses a library and museum containing books, manuscripts, objects of natural history, scientific productions, etc.

Society of Apothecaries, London, Water Lane, Blackfriars, E.C.—Secretary, Mr. F. Haydon. This Society grants a diploma, on examination, entitling the holder to be registered as a general medical practitioner.

Society of Arts, 18, John Street, Adelphi, London, W.C.—This Society was formed for the purpose of advancing the useful arts and manufactures of this country, especially through the application of scientific and other researches to the development of commercial industries. The ordinary meetings are held on Wednesdays during the winter at 8 p.m. The Society bestows upon individuals rewards for such productions, inventions, or improvements as tend to benefit the country, directly or indirectly. The Cantor Lectures form a prominent part of each winter's programme. Examinations are held annually at various centres, which are open to any person, the subjects including the principal divisions of a commercial education and music. A programme containing detailed information can be had on application to the Secretary, Sir Henry Trueman Wood, M.A. The annual subscription to the Society is two guineas, life subscription twenty guineas. The privileges of membership include admission to the lectures, exhibitions, conversazioni, library, and reading-room of the Society. Candidates for the same are proposed by three members, one of whom, at least, must sign on personal knowledge, or are nominated by the Council.

Society of Chemical Industry, Palace Chambers, 9, Bridge Street, Westminster, S.W. (General Secretary, Mr. Charles G. Cresswell).—The Society was founded for the advancement of the study and practice of applied chemistry by discussion and by the diffusion of information on applied chemistry and chemical engineering among its members. Local sections have been formed at London, Liverpool, Manchester, Newcastle-on-Tyne, Nottingham, New York, as well as in Scotland (Glasgow and Edinburgh), and in Yorkshire. The monthly journal is of interest to manufacturers, works managers, inventors, and others as recording the latest advances in technical chemistry. Among others therein are sections on acids, alkalies, salts, electro-chemistry, fats, oils, and soap manufacture, resins and varnishes, manures, sugar, starch, gum, foods, disinfectants, fine chemicals, alkaloids, essences and extracts, photography, and analytical chemistry. London members meet in the Chemical Society's rooms, Burlington House, W. The Society holds its annual meetings in July. Annual subscription, 25s.; entrance fee, one guinea. Members are entitled to one monthly copy of the journal. Candidates for admission to the Society must be formally proposed by at least one member to whom he is known personally.

Society of Public Analysts.—The membership of this Society is open to persons who are engaged in the "profession of analytical chemistry," and is not restricted to public analysts holding their appointments under the Sale of Food and Drugs Acts. Election is by ballot, and a candidate must be recommended by not less than four members, of whom three at least must testify from personal knowledge to his "scientific and social fitness. The Society meets in the rooms of the Chemical Society, Burlington House, Piccadilly, W., on the first Wednesday in each month from November to June. Annual subscription, £1 1s. Hon. Secretary, Mr. E. J. Bevan, 4, New Court, Lincoln's Inn, W.C.

University of London, Imperial Institute, South Kensington, London, S.W.

Worshipful Company of Spectacle Makers, Guildhall, E.C., (Clerk, Colonel T. Davies Sewell, to whom all inquiries should be addressed).—The Freedom of the Company is open to members of the optical trade on passing certain theoretical and practical examinations. Further particulars will be found in the Photographic and Optical Supplement to the ***P.J.***, published March 30 last, as to examination, fees, privileges, etc.

MISCELLANEOUS NEWS.

The Chemists' Exhibition.—The eighth Chemists' Exhibition organised by the *British and Colonial Druggist*, of 44, Bishopsgate Without, E.C., will be opened at Manchester on June 3. Of the previous exhibitions six have been held in London and one in Manchester, viz., in 1900. All have been great successes, being very largely attended by the chemists and druggists of Great Britain and Ireland, as well as by a number of foreign and colonial visitors. The present and past displays comprise exhibits by the leading wholesale and manufacturing houses supplying chemists. The exhibition portrays the advances made from year to year in pharmaceutical and chemical requirements. Not only is the exhibition a large mart, but it constitutes annually a splendid opportunity for the members of the trade to meet and exchange opinions. In a handsome pavilion the staff of the *British and Colonial Druggist* entertain their friends and subscribers.

The Annual Bowling Match between teams representing the wholesale and retail trade in Glasgow was played on Friday evening, the 23rd inst., on Hillhead Green, of which Mr. Currie is president. Two rinks were kindly granted by the directors for the game. The weather was fine, and the turf in excellent condition. After a most enjoyable game of 21 ends the wholesale representatives were the winners by a majority of 17 shots. The following were the teams:—

WHOLESALE.		RETAIL.	
R. McAdam		G. Robertson	
G. Mackay		G. S. Kitchin	
H. Thomson		W. L. Currie	
W. Greig (skip)	20 shots	J. Moir (skip)	17 shots
J. Walker		D. Moir	
M. Wallace		R. Gordon	
D. Houston		T. Adam	
J. Cavincross (skip)	27 shots	W. Galbraith (skip)	13 shots

SCHOOL AND COLLEGE NEWS.

Cricket.—London College *v.* South London School of Pharmacy.—Played at Nunhead on Saturday, May 24. London College batted first and made a total of 19 (J. F. Carr 6). This was answered by an innings of 30 runs by Muter's (West 13). On going in for the second time London College knocked up 45 (Hands 15), whilst Muter's on their second attempt scored 71, of which Turner had 29 to his credit. Bowling for the South London School, Ross was very successful, taking eight wickets for 18 runs.

Glasgow School of Pharmacy.—On Thursday, May 22, a botanical excursion to Garelochhead was held by the students and demonstrators of this school. A most enjoyable day was spent, the party sailing from Craigendoran, and a number of interesting specimens obtained, including the following:—*Pinguicula vulgaris, Drosera rotundifolia, Pulmonaria officinalis, Barbarca vulgaris, Asperula odorata, Cochlearia officinalis, Armeria maritima, Plantago maritima, Lycopodium selago, Myrica gale, Polygala vulgaris, Linaria cymbalaria, Vinca minor.*

West of Scotland College of Pharmacy.—The most successful excursion in the annals of the College was made on Victoria Day (May 22) to the Falls of Clyde, Lanark, when about thirty students, with the Principal (Mr. Barrie), were present, despite the unfavourable weather. On their arrival at midday at the Falls the party was photographed, and immediately thereafter the botanical part of the excursion was entered upon. A large number of splendid specimens were collected, including *Myrrhis odorata, Saxifraga stellaris, Viola canina, Ornithopus perpusillus, Prunus spinosa, Pinus larix, Geum urbanum, Scilla nutans, Caltha palustris,* etc. The walk through the grounds, which extend about two miles, is very beautiful, always in sight of the river, and overhung with trees. At the Corra Linn the river makes a total descent of 84ft. in three distinct leaps, dashing into milk-white foam into the abyss beneath. At the Bonnington Falls the river falls through 30ft. only, and, owing to its peculiar situation, yields a very pretty but deceptive photograph. On the way back to Lanark a halt was made for a game at football, which, however, came to a sudden stop owing the bursting of the ball. After dinner and until tea the students dispersed in various ways, returning to the city at 8.30 p.m. tired but happy.

SOCIETY AND ASSOCIATION NEWS.

The Royal Photographic Society.—The forty-seventh annual exhibition of this Society is to be held in the New Gallery, 121, Regent Street, London, W., from September 29 to November 4, and will include five sections as follows:—(1) Selected pictorial photographs, (2) general professional work, (3) photographic apparatus and material, (4) photo-mechanical processes, (5) scientific photography and photography in its technical applications. Particulars as to rules and regulations may be obtained of the Secretary, Mr. A. W. W. Bartlett, 66, Russell Square, W.C.

COMPANY INTELLIGENCE.

Reynolds and Sons, Dentists, Limited.—This company was registered on May 16, with a capital of £1,000 in £1 shares, to acquire the business of an artificial teeth manufacturer carried on by R. W. H. Reynolds at 91, Newport Street, and 102, Chorley Old Road, Bolton, as Reynolds and Sons, and to carry on the general business of artificial teeth manufacturers, chemists, druggists, perfumers, etc. No initial public issue. Permanent managing director: R. W. H. Reynolds. Ordinary directors: J. Agnew, W. E. Reynolds, T. Taylor, and W. J. S. Reynolds. Registered office: 91, Newport Street, Bolton.

Chambers and Sleightholme, Limited.—This company was registered on May 13, with a capital of £1,000, in £1 shares, to acquire the business hitherto carried on as Chambers and Sleightholme, by Thomas Chambers and J. Sleightholme, both of Rotherham, together with all or any of the assets and liabilities thereof, to adopt a certain undetailed agreement, and, generally, to carry on business as grocers, provision merchants, etc., dealers in proprietary articles, preserved meats, oils, flavouring essences, etc., mineral water manufacturers and dealers, chemists, druggists, and drysalters, soap manufacturers, etc. No initial public issue. The directors are Thomas Chambers and J. S. Sleightholme. Qualification, £100. Remuneration to be fixed by the company.

Petanelle, Limited.—This company was registered on May 16, with a capital of £50,000 in £1 shares, to carry on the business of manufacturers of and dealers in "Petanelle," peat fuel, peat moss, etc., also as chemists, druggists, drysalters, oil and colour men, etc. The signatories, each of whom takes one share, are:—A. H. Hersee, 8, Piccadilly Circus Mansions, W.; H. J. H. Chapman, 61, The Drive, High Barnet; J. F. Crisp, 31, Ossington Street, W.; N. F. Bennett, 5, Wool Exchange, E.C.; W. R. Long, 35, Southerton Road, Hammersmith; A. G. Willoughby, 54, Malmesbury Road, Bow; C. M. Trevor, 48, Queen's Gardens, Hyde Park, W. Minimum cash subscriptions, seven shares. The number of directors is to be not less than three nor more than nine. The first are J. Burke, W. G. Miller, C. Steel, J. Susman, and J. Dixon. Qualification, two shares. Remuneration of ordinary directors, £200 per annum (chairman £250 per annum), to be increased according to profits.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. John Barclay, B.Sc., has been appointed external examiner in materia medica and pharmacy at the Birmingham University.

Mr. John Brown, pharmaceutical chemist, Kelso, has purchased the business of Mr. Hutchinson, 5, High Street, Berwick-on-Tweed.

Mr. G. W. Smithson, chemist and druggist, has purchased the business lately carried on by Mr. G. G. Hornsby, of High Street, Rotherfield.

Mr. William R. Girling, Ph.C., M.P.S., has purchased the old-established business formerly carried on by the late Mr. J. T. Maxey at 8, High Street, Wisbech.

Mr. W. Johnston, pharmaceutical chemist, 69, Loughborough Road, Brixton, has transferred his business to his late manager, Mr. J. E. Strachan, and Mr. J. Shaw, of London Road, who will carry it on as partners.

Mr. H. Creemer Cooper, L.R.C.P., M.R.C.S., L.S.A., L.D.S.Eng., son of Mr. Albert Cooper, of Gloucester Road, South Kensington, has removed from Ealing to 36, Cavendish Square, W., where he will continue his practice as a dental surgeon.

Mr. A. Sidney Campkin, J.P., of Cambridge, was present at the A.M.C. of the Manchester Unity, held at Newcastle-on-Tyne during Whit week. There were nearly 700 delegates, representing lodges and districts from all parts of the kingdom. At the end of the proceedings, in which Mr. Campkin took a prominent part, especially in connection with the report of the Grand Master and directors, he was re-elected by a large vote to a high position on the poll as one of the directors of the Unity, a position he has occupied since 1884. He was also elected second on the poll as one of ten appointed to represent the Manchester Unity at the conference of friendly societies to be held at Chester in March next.

TRADE NOTES AND NOVELTIES.

Absorbent Wool.—Messrs. H. P. Thompson and Co, of Aldersgate Street, are introducing a fine quality of surgeon's absorbent wool, which is specially manufactured for them by Messrs. Bauer and Black of Chicago. The price compares favourably with other makes, whilst the quality is first rate.

Mr. G. T. Bauer, of Messrs. Bauer and Black, Chicago, sailed for home last Friday by the s.s. "Celtic," after a most successful business trip to Europe. Most of his time was taken up in appointing agents in the different Continental cities, many of which he visited in company with Mr. H. P. Thompson, of Aldersgate Street, whose firm act as London agents for Messrs. Bauer and Black.

Messrs. Ashton and Parsons, Limited, 17, Farringdon Road, London, E.C., announce that the increasing demand for Phosferine, etc., and their well-known brand of homœopathic medicines, has compelled them to obtain additional premises, which they have secured at 48, Farringdon Street. All communications are to be sent, as hitherto, to their head warehouse, 17, Farringdon Road, E.C.

Urea Tabloids.—Increased attention has been devoted to the treatment of tuberculosis during the past few years, and in this connection the administration of urea has been prominent. Although the remedy is still only upon trial, the reports of observers upon the results which have followed its use are very encouraging. The dose recommended is from five to twenty grains three times a day, and Messrs. Burroughs Wellcome and Co. are now preparing tabloids, each of which contains five grains of urea. They are supplied in bottles containing 100.

The "Exceptional" Camera Set.—Messrs. F. Darton and Co., 142, St. John Street, London, E.C., are introducing an English-made ½-plate tourist camera set, fitted with Darton's London-made rapid symmetrical lens, Iris diaphragm, three book-form double dark slides, turn-table, roller-blind shutter, and three-fold ash tripod, in waterproof carrying case. This is a thorough good, highly-finished set, which may be well recommended for high-class photography. The price is £11 11s., or bound with brass for hot climates £13 10s. A cheaper ½-plate set of the same series is supplied at £3 10s.

The "Glossana" Gold Enamel.—Messrs. Reinemann, Gutmann, and Company, 9, Love Lane, Wood Street, London, E.C., send a sample box of "Glossana" gold enamel which they claim to be the only substitute for real gold leaf. It is put up in boxes from 1s. to 5s., and is said to be far superior to the ready-mixed gold paint, as it is non-inflammable and non-evaporative, besides being very permanent in brilliancy. Each box contains the gold enamel in powder, a bottle of liquid medium, a small saucer, a brush, and a small stick. Further particulars will be sent by the makers to any chemist on application, mentioning the *P.J.*

Bond's Crystal Palace Marking Ink.—An improved form of this well-known and saleable article has recently been introduced which requires no heating. In order that the retailer may readily supply his customers with whichever kind they prefer, the proprietors in future, when no instructions to the contrary are given, will supply the inks in packages containing six bottles of the improved kind, requiring no heating, and six bottles of the original preparation. Should one kind only be wanted, instructions to that effect should accompany the order. The proprietors notify that they will be pleased to exchange any old or soiled stock, and allow in full for it. The address is 75, Southgate Road, London, N.

Newbery's Illustrated Photographic Catalogue.—Messrs. Francis Newbery and Sons, 27 and 28, Charterhouse Square, E.C., have for some years given special care and attention to the requirements of chemists who have been induced to take up the photographic business, and in 1900 they published a separate list of photographic goods. This year the list is just twice the size it was two years ago, and in addition to photographic requisites it gives particulars of aneroid barometers, magneto-electric goods, watches, etc. A private discount key is supplied with the list. Chemists who have not received a copy of the catalogue should apply for one at once as they will doubtless find something of business interest therein.

A Handy Photographic Catalogue.—Messrs. Joseph Levi and Co., 97, Hatton Garden, London, E.C., submit a copy of their illustrated catalogue of photographic and optical goods. This is a handy list for reference, every attention having apparently been given to make it as complete and abbreviated as possible, while the prices against each article have been calculated for the retailers' customers, a substantial discount off those prices being allowed to the trader. The list contains 136 pages enclosed within stiff covers, and particulars are given of several specialties which it may be to the interest of chemists to see. Among these are the "Klito" hand cameras to retail at prices from 21s. to 63s. These are all London-made cameras, and are exceptional value. Apply to Messrs. Levi and Co. for particulars, mentioning the *P.J.*

Shopfittings.—Messrs. Ayrton and Saunders, Liverpool, write as follows:—On more than one occasion in your columns of last year, we inserted particulars, in the form of an advertisement for our shopfitting department, to show our friends what could be done in the way of shop fittings for £100, £50, and £25. The scheme arranged that a complete £100 shop, a £50 window enclosure (or other fittings), and a £25 window enclosure or showcases, would be presented free of charge to the three chemists who sent us in respectively the largest number of orders, the second in number, and the third in number; all orders had to be on the lines laid down in the advertisement with respect to amount, etc. We have now gone carefully through our books and find the three men respectively who, having carried out the conditions, are entitled to the presentations, are as follows:—

First.—Mr. E. J. Morris, The Villa Cross Pharmacy, Handsworth, Birmingham. Complete £100 Shop.
Second.—Mr. E. R. Thomas, 40, Castle Street, Beaumaris. £50 Window Enclosure, or Other Fittings.
Third.—Mr. F. J. Parker, Derby Road, Huyton. £25 Window Enclosure, or Showcases.

We have accordingly advised these three men that they have been successful, and shall be glad if, as an assurity of good faith, you will mention the facts in your next issue.

The "Exceptional" Hand Cameras.—Hand cameras are now much in evidence, and some are being put upon the market at extremely low prices. Some of these are really marvellous value for the money, turning out very fair work, and amongst them may be mentioned the "Lux" supplied by Messrs. F. Darton and Co., 142, St. John Street, E.C. This series—comprising No. 1, 3½ by 2½, and No. 2, 3¼ by 3¼, to hold six plates; and No. 3, 3¼ by 3¼, to hold twelve plates—are cloth-covered and good saleable lines at 5s., 6s., and 11s. respectively. But for those who desire a better-class article the "Exceptional" series manufactured by Messrs. Darton and Co. can be strongly recommended. This series includes "The 'Junior' Exceptional" covered-in pegamoid, with two hooded brilliant finders, and a changing action of an entire new model, Iris diaphragm, time and instantaneous shutter, achromatic lens, speed indicator, plate register, complete with twelve ¼-plate sheaths, price £1 1s.; "The 'Exceptional' Hand Camera," a well-made camera, covered with morocco and fitted with improved automatic plate register and brilliant finders, price, to hold twelve plates, 4½ by 3¼, £1 17s. 6d.; "The 'R. R.' Exceptional Hand Camera," on the same model as the "Junior," but fitted with an R.R. lens, Iris diaphragm, focus attachment, a new type of changing action which entirely prevents more than one plate falling at once, and a hinged front to allow the lens and finders to be dusted when necessary, at £2 10s., or morocco covered and fitted with pneumatic and mechanical release to shutter, and plate register, price £3 15s.; and "The Exceptional," a highly-finished magazine camera, with R.R. lens, Iris diaphragm focussing arrangement, and distance register, and a shutter of the latest improved form giving a range from ½ minute to 1/100th second. It has also a sliding base, allowing exposed plates to be removed without opening the magazine; price £5.

New Patent Urinal.—Messrs. F. H. Taylor and Sons, New Wharf Road, King's Cross, London, N., have recently brought out a new patent urinal, which can be closed air and watertight by simply turning a hollow inserted piece which acts as a stopper. This urinal consists of a base A and an inserted piece B for male and B1 for female. B and B1 are hollow, closed posterior and fitted with an outlet C adjusted to the neck of base A, easily turnable, being ground in and polished. The neck of A is interrupted by a widening marked D. When in use C is above D, the urine flowing into A as indicated by arrow (see Fig. 1). After use B or B1 is simply turned upwards, thus effectually closing the urinal, the opening C being enclosed from all sides by the walls of the neck of A, as in Fig. 2. The advantages of this will be apparent to all who have had experience of these appliances in the sick-room, and even for general household use it will be much better from a sanitary point of view than the old-fashioned chambers. Further particulars may be had from the firm.

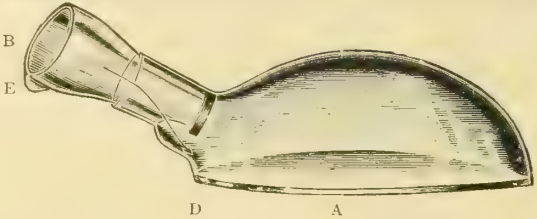
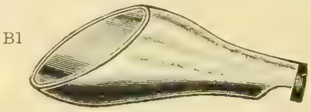


Fig 1.



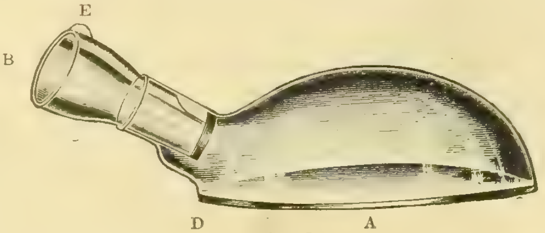


Fig 2.

Seasonable Scientific Novelties.—A recent visit to the Clerkenwell Optical Works, the business premises of Messrs. F. Darton and Co., 142, St. John Street, London, E.C., emphasised very forcibly the truth of the opinion that the chemist, or pharmacist, of to-day is above all tradesmen the best fitted, scientifically, to deal in photographic, optical, and other scientific instruments. As Mr. Darton pointed out to a *P.J.* representative, the scientific public and dabblers in matters more or less connected with science like to know that they are dealing with a person who understands and can intelligently converse about the appliances he sells; hence the chemist who fosters the knowledge gained while studying for the qualifying examination, and judiciously applies the same in his business, is much more likely to build up a remunerative connection than the chemist who looks upon the scientific subjects of the Minor syllabus as useless and unnecessary. Many chemists have already established good profitable businesses, outside pharmacy, by intelligent application of the knowledge referred to and, in the opinion of those well qualified to judge, there is still plenty of scope for others. Each season has its special trade, and the chemist who up to the present has not done anything in scientific side-lines, would do well to think the matter over, and to communicate with a firm like that of Messrs. F. Darton and Co., who will doubtless be pleased to advise as to the class of goods which would be likely to sell in any particular district. For example, during the summer months, at the seaside and elsewhere, there is a considerable demand for tinted spectacles and cheap marine and field-glasses; then with autumn and the approach of winter arises a demand for electric night-lights and other electric novelties, cheap French microscopes, magic lanterns and lantern accessories, while the advent of the motor-car has created quite a large demand not only for "motor-masks" for protecting the eyes, but also for various scientific accessories which chemists may very well supply. Those readers of the *P.J.* who do business with Messrs. F. Darton and Co. will probably be interested in their new catalogue of photographic apparatus and accessories, which contains particulars of a number of specialties worthy of notice; several of these are dealt with in separate notes. A copy of the catalogue, or information concerning their specialties, will be sent to any chemist on application to Messrs. Darton and Co., mentioning the *P.J.*

PUBLICATIONS RECEIVED.

Scientific and Industrial Bulletin of Roure-Bertrand Fils, of Grasse, April, 1901, Series 1, No. 5, Pp. 76. Evreux: Charles Herissey, 4, Rue de la Banque, 4. 1902. From the Publisher.

Protoplasm: Its Origin, Varieties, and Functions. By John W. Hayward, M.D. Pp. 51. Price 1s. 6d. net. Bristol: John Wright and Co. 1902. From the Publishers.

Practical Methods of Urine Analysis, with Notes on the Composition of the Normal and Abnormal Renal Secretions. Second and Enlarged Edition. Pp. 88. Price 2s. 6d. net. London: The *Chemist and Druggist*, 42, Cannon Street, London, E.C. 1902. From the Publishers.

Science in the Daily Meal: Dietetic Treatment for Gout, Rheumatism, Dyspepsia, etc., with one hundred "Uric Acid Free" Recipes. By Albert Broadbent, F.R.H.S. Third Edition. Pp. 44. Price 6d. Manchester: Albert Broadbent, 19, Oxford Street. 1902. From the Publisher.

DIARY OF THE WEEK.

Monday, June 2.

Royal Institution, Albemarle Street, Piccadilly, W., at 5 p.m.—General Monthly Meeting.

Society of Chemical Industry, Burlington House, Piccadilly, W., at 8 p.m.—"A Contribution to the Chemistry of Whiskey. I.," By Dr. Philip Schidrowitz; "The Estimation of Perchlorate in Saltpetre, etc," by Dr. A. Dupré; "On the Will Test for Nitrocellulose," by Dr. Robert Robertson; "On the Effect of the Alcohol Duty on Chemical Industries," by Dr. O. Silberrad.

Tuesday, June 3.

Royal Photographic Society, 66, Russell Square, London, W.C., at 8 p.m.—Second Informal Meeting; members are invited to bring objects of interest; W. Smedley Aston's Photographs will also be on view.

Wednesday, June 4.

Aberdeen Pharmaceutical Association, Robert Gordon College.—Ordinary Meeting.

Thursday, June 5.

Chemical Society, Burlington House, Piccadilly, W., at 8 p.m.—"The Action of Ungerminated Barley Diastase on Starch" (Part I.), by J. L. Baker; "The Decomposition of Chlorates" (Part V.), "Potassium Chlorate in Presence of Oxides of Manganese," by W. H. Sodeau.

Linnean Society, Burlington House, Piccadilly, W., at 8 p.m.—Ordinary meeting. Papers on "Certain Species of *Dischidia* and their Double Pitchers," by Mr. H. H. W. Pearson; "Silver-leaf Disease of Plumes," by Professor John Percival; "Observations on the Occurrence of Crystals of Calcium Oxalate in Seedlings of Alsike (*Trifolium hybridum*, Linn.)," by Professor John Percival; "Morphology of the Cerebral Commissures in the Vertebrata," by Dr. Elliot Smith.

MARKET REPORT.

The articles quoted here have often to be sorted in order to suit the requirements of the retail pharmacist, and the quotations given are in all cases the lowest cash prices for bulk quantities. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London, Thursday, May 29, 1902.

Business in Drugs and Chemicals has again been deplorably quiet during past week. The only changes of importance have been a reduction in price of Cocaine and an advance in Phenacetin. Otherwise matters remain in *statu quo*, with but little prospect of real improvement until the autumn. The London Bark sales on 22nd inst. passed off well, but this has so far had but little effect upon the value of second-hand Quinine.

CINCHONA BARK.—At these periodical auctions, the fifth of the series, held on the 22nd inst., fair supplies were again brought forward, amounting to 3,324 packages of all descriptions, against 4,248 packages at the previous sale and 4,072 packages at the corresponding sale last year. There was good competition at the opening, but afterwards the demand was rather dragging and prices somewhat irregular. Fully three-fourths, however, found buyers at about the average unit of last sale, viz., 1⅝d., which result is rather better than the last Dutch sale. East Indian: 1,598 bales and 98 cases offered and 1,106 bales sold, according to analysis. Succirubra, stem chips and shavings, ordinary to fair at 2½d. to 5d., renewed ditto ordinary to good rich at 3d. to 8¼d., root at 3⅛d. to 4⅞d., branch at 1¾d. to 3⅛d. Officinalis, stem chips and shavings, fair to good rich at 4⅝d. to 8½d., ordinary at 2½d. to 3½d., renewed ditto ordinary to good at 3⅝d. to 7¾d.; root, fair to good at 3d. to 8⅜d., branch at 2¼d. to 4½d. Ledger, good stem chips at 7⅛d. to 8d., good root at 7⅝d., and branch at 3⅝d. to 5⅞d. Ceylon: 426 packages offered and 354 sold. Red, stem chips and shavings, ordinary to good rich from 2½d. to 8¼d. Officinalis, stem and chips at 3¾d., renewed ditto good 4¾d. to 6d. Ledger, ordinary to good stem chips at 3⅛d. to 10d., root at 4¾d. Java: 139 bales offered and 93 sold. Ledger, good stem chips at 9¾d., stem chips and branch at 4⅝d. to 6d., good root at 11¼d. South American: 679 packages Bolivian Cultivated Calisaya offered and 665 packages sold, ordinary to good quill at 3¼d. to 11⅛d., flat at 2s. 3d., and CDC1 at 1s. 7d. 384 packages of old import offered and sold, without reserve, soft Columbian at 1d. to 1⅝d., and Cuprea at 2¼d.

COCAINE.—Makers have reduced price 1s. 6d. per oz. to 16s. 3d. per oz. for the hydrochlorate for 200 oz. lots in 25 oz. tins.

CODEINE—Is without change at 10s. 7d. per oz. for the pure Alkaloid in 100-oz. lots.

MENTHOL—Is now quoted 13s. 9d. to 14s. 6d. per lb. for Kobayashi brand.

MORPHINE—Unchanged nominally at 4s. per oz. for the Hydrochlorate Powder, but market is very weak, and with a large crop of Opium reported likely, it looks as if we must inevitably see a further decline in value.

OPIUM—Is dull and weak, some reports estimating the new crop at more than 10,000 cases, which, if correct, can hardly fail to further depress value.

PHENACETIN—Has at last moved upwards, and makers' prices are now 6s. 7d. nett per lb. for less than 56 lbs. down to 6s. per lb. for 10 cwt. contracts for bulk packing in paper parcels.

QUININE.—B. and S. and Brunswick sulphate can be still bought in limited quantity at 1s. 1d. to 1s. 1½d. per oz., according to delivery, while makers' price for these brands is still unchanged at 1s. 3d. per oz. for 1,000 oz. lots in 100 oz. tins.

THURSDAY'S DRUG SALES.

To-day's drug auctions only comprised eleven small catalogues, two of which were withdrawn. Many lots, however, failed to sell, while beyond that both Cardamoms and Cardamom Seeds sold at a slight advance there are no changes in value of any importance to record. At these intermediate auctions it is understood that only goods are included which have not been offered previously in public sale, but a more practical way would be to revert to monthly auctions, which has been so often proposed.

ALOES.—73 boxes Curacoa were practically all bought in at 35s. per cwt. for fair livery. Other 26 boxes ditto were taken out at 20s. to 25s. Of other 21 kegs ditto only 2 kegs sold at 28s. per cwt. 1 keg Egyptian sold at 26s. per cwt.

AMBERGRIS.—1 tin white sold at 80s. per oz., and 1 tin, consisting of heavy, almondy stuff, sold, subject to holder's approval, at 47s. per oz.

ANNATTO SEED.—10 bags were taken out at 1½d. per lb.

BALSAM COPAIBA.—Of 10 cases, 5 cases sold at 1s. 8d. per lb.

BALSAM PERU.—4 cases did not sell.

BUCHU LEAVES.—8 bales were bought in at 1s. per lb.

CALUMBA ROOT.—100 bags medium sorts all sold at 9s. per cwt. 20 bags fine picked washed were bought in at 60s. per cwt.

CARDAMOMS.—24 cases Ceylon were bought at 2s. 3d. for medium bold Mysores. Other 50 cases nearly all sold at 2s. 2d. per lb. downwards, according to size, etc., good seed realising 1s. 9d. per lb. Other 47 cases were chiefly bought in, a few cases of less desirable quality selling at 1s. 3d. per lb. downwards. 10 cases good seed sold readily at 1s. 8d. per lb. Other 14 cases were bought in.

CASCARA SAGRADA.—50 bags old bark did not sell.

COCCULUS INDICUS.—60 bags of fair quality were taken out at 10s. per cwt.

DRAGON'S BLOOD.—4 cases dull to medium bright lump were taken out at £10 per cwt.

ESSENTIAL OILS.—Oil Cinnamon: 4 cases, catalogued as fine oil, were taken out at 2s. 2d. per lb. 1 case West Indian Lime Oil sold at 2s. per lb. 6 cases Magnet brand Oil Eucalyptus were taken out at 1s. 4d. per lb. 38 cases Oil Lemongrass were taken out at 6d. per oz. 30 cases Oil Cassia, part sold without reserve at 2s. 1½d. per lb. for 73½ per cent. Cinnamic Aldehyde, and 2s. 3d. to 2s. 3½d. per lb. for 78 per cent.

CUAZA.—19 bales failed to sell, 2s. 6d. per lb. being price mentioned.

GUM ARABIC.—30 bags Turkey sorts were bought in at 34s. per cwt.

GUM BENZOIN.—30 cases Double Goat brand fine Sumatra, which had been catalogued, had not been landed in time for the sale.

GUM MYRRH.—29 pkgs. were bought in at £7 per cwt. for fine picked.

HONEY.—164 packages Jamaica practically all sold at 19s. to 19s. 6d. per cwt. for tins and cases, and at 15s. to 19s. for barrels. 28 cases North American were taken out at 27s. per cwt.

IPECACUANHA.—7 barrels Carthagena part sold at 4s. per lb., balance being taken out at 4s. 3d. Of 15 bales Rio only 1 bale sold at 9s. 9d. per lb. Of other 15 bales also only 1 bale sold at 9s. 10d.

MANNA.—1 case good flake was taken out at 3s. 6d. per lb.

MUSK.—8 caddies Tonquin were taken out at 75s. per oz. for fair pods.

MUSK SEED.—1 case sold at 1s. 3d. per lb.

NUX VOMICA.—170 bags good bright Cochin were taken out at 11s. per cwt. Other 152 bags fine ditto at same figure.

ORCHELLA WEED.—50 bales were taken out at 17s. per cwt.

RHUBARB.—9 cases flat high dried all sold at 9d. per lb. Of 20 cases Shensi 3 cases round sold at 3s. 4d. per lb., and 1 case flat at 3s. 8d. per lb.; 16 cases round and flat (and round and flat mixed) Canton were taken out at high figures (3s. per lb. downwards).

SEEDLAC.—62 bags Madras did not sell.

SENNA.—16 bales Tinnivelly pods sold at ½d. to 2d. per lb.

SOY.—20 casks China, duty paid, were taken out at 1s. 6d. per gallon.

STROPHANTHUS SEED.—10 bags Kombé Seed did not sell.

VANILLOES.—2 tins Ceylon sold at 4s. 6d. and 6s. per lb. respectively.

WAX.—74 packages Zanzibar were taken out at £7 to £7 10s. per cwt., other 59 bales were taken out at £6 17s. 6d. 11 bales Chilian were bought in. 2 casks Madagascar sold at £7 2s. 6d. per cwt., and 1 bag at £6 10s. 6 packages Jamaica fetched £7 15s. to £8 per cwt. 8 bags Mazagan were taken out at £7 15s., and 12 bales bleached Spanish at £8 2s. 6d. per cwt. 2 cases Bombay sold at £6 2s. 6d. per cwt.

Calendar for June, 1902.

Day of M	Day of W	Events of the Month.	Sun Rises	Sun Sets.
1	**S**	**First Sunday after Trinity.**	3.51	8.4
2	M	Royal Institution, General Meeting, at 5 p.m. Society of Chemical Industry at 8 p.m.	3.50	8.5
3	Tu	Royal Institution, at 3 p m. Royal Photographic Society at 8 p.m.	3.50	8.6
4	W	Pharm. Soc. of Ireland, Meeting of Council, at 3 p.m.	3.49	8.7
5	Th	Chemical Society at 8 p.m. Linnean Society at 8 p.m. Royal Institution, at 3 p.m.	3.48	8.8
6	F	● New Moon, 6.11 a.m. Royal Institution at 9 p.m.	3.47	8.9
7	S	Royal Institution, at 3 p.m.	3.46	8.10
8	**S**	**Second Sunday after Trinity.**	3.46	8.12
9	M	George Stevenson born, 1781, died, 1848.	3.46	8.12
10	Tu	Pharm. Soc. G.B., Finance and other Committees.	3.45	8.13
11	W	Pharm. Soc. G.B., Meeting of Council at 11 a m.	3.45	8.13
12	Th	◗ First Quarter, 11.54 p.m. Jacob Bell died, 1859.	3.45	8.14
13	F	Dr. Lawson Tait died, 1899.	3.45	8.15
14	S	Entries close for July Examinations.	3.44	8.16
15	**S**	**Third Sunday after Trinity.**	3.44	8.16
16	M	Total eclipse of the sun in America, 1806.	3.44	8.17
17	Tu	Jacob Bell and Manchester Scholarships Competition at London, Edinburgh and Manchester. Pharm. Soc. G. B., Library, etc , Committee.	3.44	8.17
18	W	Chemical Society at 5.30 p.m.	3.44	8.18
19	Th	Linnean Society at 8 p.m.	3.44	8 18
20	F	List of County Voters to be exhibited on Church doors.	3.44	8.18
21	S	○ Full Moon, 2.17 a.m.	3.44	8.18
22	**S**	**Fourth Sunday after Trinity.**	3.44	8.19
23	M	Sir Joseph Prestwich died, 1896.	3.45	8.19
24	Tu	Midsummer Day.	3 45	8.19
25	W	John Marston died, 1634.	3.45	8.19
26	Th	Coronation Day.	3.45	8.19
27	F	Sir George Airey born, 1801; died Jan. 2, 1892	3.46	8.19
28	S	◖ Last Quarter, 9.52 p.m.	3.47	8.19
29	**S**	**Fifth Sunday after Trinity.**	3.47	8.19
30	M	Pharmacy Act (1852) passed).	3.47	8.19

Note.—Secretaries of societies and local pharmaceutical associations are requested to send early intimation of forthcoming meetings, in order that notices may be included in this column and so prevent possible clashing of dates when arrangements are being made for other meetings. Fuller information about forthcoming meetings will usually be found in the "Diary of the Week."

LONDON GAZETTE NOTICES.

PARTNERSHIP DISSOLVED.

William Henderson Nicol and Walter Marston, dentists, 12a, Clarendon Road, Leeds. Debts will be received and paid by Walter Marston.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Ashton, Barlow, Barrie, Beaton, Brown, Clark, Cooper, Cruickshank, Dunlop, Ellis, Farmer, Ferrall, Forrest, Gilmour, Goodson, Gowans, Hornby, Hudson, Jack, Jackson, Johnston, Kilner, Ling, Lyon, Macfarlane, Mawer, Mayson, Melbourn, Parkinson, Paterson, Polgreen, Sargeant, Shadforth, Skinner, Stocks, Summerfield, Wills, Wolstenholme.

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There are many worrying difficulties to be overcome in connection with the Registration of Trade Marks and the grant of Letters Patent, which members of the Retail and Wholesale Drug Trade can avoid by consulting an efficient agent, who would undertake all the trouble for an inclusive fee and obtain protection in the United Kingdom and abroad. Advice in the first instance free. Pamphlets gratis.
REGINALD W. BARKER.
55, Ludgate Hill, London.

BIRTH.

Sargeant.—On Friday, May 23, at Leeds, the wife of F. Pilkington Sargeant, of a son.

Pharmaceutical Journal

SATURDAY, JUNE 7, 1902.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

QUALIFIED ASSISTANT wanted (outdoors); short hours; no Sunday duty.—BEDFORD & Co., 6, St. Swithin's Lane, E.C.

A QUALIFIED ASSISTANT wanted, experienced in Dispensing; outdoors.—Apply personally, or send full particulars to ALLEN & HANBURYS, LTD., 7. Vere St., W.

PIERCE, TULLEY & Co., late The General Apothecaries' Co., 16, Bishopsgate St. Within, E.C., require immediately a qualified JUNIOR; outdoor; personal application only.

SAVORY & MOORE, Lancaster Gate, Hyde Park, W., require immediately a qualified ASSISTANT, with good dispensing experience.—State full particulars to the MANAGER.

WANTED, qualified ASSISTANT (outdoor), for Dispensing and light Retail business.—Apply with full particulars, and enclose photo if convenient, to LONG & STRICKLAND, Pharmaceutical Chemists, Bognor-on-Sea.

WANTED immediately, a qualified ASSISTANT (indoors), one with knowledge of Welsh preferred.—Give full particulars, including experience, references, age, and salary required, to T. HUGHES, Chemist, Llandilo, South Wales.

CAPABLE qualified ASSISTANT required (married preferred) with view to manage a branch.—State full particulars as to experience, age, height, references, salary required, and enclose photo to ANDERSON & VIRGO, Chemists, Worcester.

REQUIRED, DISPENSER; Minor qualification; hours, 1.30 to 6 daily, and two evenings; no Sunday work.—Apply, with copies of testimonials and stating salary required, to SECRETARY, London Throat Hospital, 204, Gt. Portland St., W.

WANTED immediately, an ASSISTANT, capable of managing branch, in a South Wales colliery district; Welsh preferred; abstainer; hours easy; no Sunday duty.—Apply, with full particulars, to CHEMIST, Pharm. Journal Office, 8, Serle St., W.C.

WANTED, qualified ASSISTANT (indoors), for good-class retail and dispensing business; must be neat and accurate Dispenser and possess good references.—Write, giving full particulars as to age, height, salary required, &c., RHEI, c/o Messrs. Maw, Son & Sons, Aldersgate St., E.C.

BRIGHTON.—Gentlemanly JUNIOR or IMPROVER; passed Preliminary preferred; outdoors; moderate hours; good opportunity for experience.—Give full particulars, age, height, references, experiences, when disengaged, salary required, send photo (to be returned), EUCALYPTUS, c/o Harker, Stagg & Morgan, Laurence Pountney Lane, London.

Assistants Wanted—Continued

LONDON, S.E.—Wanted, immediately, a Junior ASSISTANT; must be a good Counterman and well recommended; also an ASSISTANT for the evening only.—The PROSSER ROBERTS Co., Pharmaceutical Chemists, Camberwell, S.E.

LONDON, S.W., near Schools.—Indoor ASSISTANT, accustomed to good-class trade, salary £40; two evenings off weekly and one hour daily, alternate Sundays.—Send photo and particulars to SIGMA, Pharm. Journal Office, 8, Serle St., W.C.

A FRENCH speaking qualified ASSISTANT required shortly for London; age about 25; hours moderate and a good progressive salary to be given; qualification and good-class experience essential.—Apply, giving fullest particulars of age, height, experience and salary expected to PHARMACIEN, Pharm. Journal Office, 8, Serle St., W.C.

CAPE COLONY.—Wanted, qualified ASSISTANT, of good experience and having undeniable references; aged about 23; salary, 1st year, £13 per month; 2nd year, £14 per month; 3rd year, £15 per month; sleeping accommodation provided; second-class passage paid out; 3 years' agreement.—Apply, COLONY, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

THE ROYAL HOSPITAL FOR DISEASES OF THE CHEST,
CITY ROAD, E.C.

DISPENSER required, must have the Major or the Minor Pharmaceutical qualification; commencing salary £100 per annum, increasing £5 per annum to £120; similar experience a recommendation.

Applications and testimonials to be sent to the SECRETARY, at the Hospital.

May 29th, 1902.

CALCUTTA.—Wanted at once, a qualified ASSISTANT; age about 24 years; must be able to conduct analysis; first-class opening for a competent man. Salary, 1st year, 275 Rs. per month; 2nd year, 300 Rs. per month; 3rd year, 325 Rs. per month, and 4th year, 350 Rs. To a candidate of exceptional experience the salary will be increased. 4 years' agreement. Second class passage paid both ways.—Apply by letter to CALCUTTA, c/o Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

SOUTH AFRICA (healthy coast town).—At once, two qualified ASSISTANTS required, one for the Wholesale and the other for the Retail. Must be thoroughly reliable, competent, steady, and of sober habits; latter most essential. Scotchmen preferred; aged from 21 to 25; Minor qualification. For the Wholesale, the Assistant must have had previous experience. For the Retail, the Assistant must have had first-class Dispensing and Retail experience. Salary, 1st year, £13 10s. per month; 2nd year, £14 10s.; 3rd year, £15 10s.; without board and outdoor (sleeping accommodation provided, conditionally, for Retail Assistant). Second-class passage paid out, and allowance on board. Three years' agreement.—Address, SOUTH AFRICA, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

LOCUM; qualified; abstainer.—E. Kemp, 11, Cheapside, St. Leonards-on-Sea.

TEMPORARY; 31; qualified; experienced; disengaged.—Statim, 49, Abbey Rd., N.W.

TEMPORARY or otherwise; abstainer; good reference.—Pharmacist, 107a, Aslett St., S.W.

LOCUM; lady (Minor), wants temporary work.—Forest Glen, Forest Rd., Moseley, Birmingham.

QUALIFIED; 23; experienced; good references; abstainer.—I. Todd, 6, Ashgrove, Cockermouth.

DISENGAGED evenings and Sundays; good references.—Antipyrine, 74, High St., Camden Town.

LOCUM; 21; disengaged June 19.—Address, Treneer, 11, Waldemar Avenue, Fulham, London, S.W.

ASSISTANT or Manager; 43; qualified; married; permanency.—Live, 56, Corporation St., Walsall.

DISPENSER (Lady); qualified; holiday or permanent engagement.—Bismal, Pharm. Journal Office, 8, Serle St., W.C.

DISENGAGED; Manager or Assistant; qualified; experienced.—Chemist, 55, Frodingham Rd., Scunthorpe, Doncaster.

ASSISTANT; 20; manufacturing Specialities, Granular and Effervescing preparations.—H., 239, St. Ann's Rd., South Tottenham.

MANAGER or Senior; qualified; 27; exceptional first-class experience; highest references.—Apply, Aristol, Pharm. Journal Office, 8, Serle St., W.C.

MANAGER, qualified, in first-class country business, North England; good house attached if possible; married; 6 ft.; abstainer.—Chemist, c/o Shepherd, 6, Shaw St., Derby.

LOCUM TENENS; days, weeks; moderate; reliable; engagements booked forward.—T. C. Beach, M.P.S., Windsor Edge, Inchbrook, Stroud, Glos. Telegrams: Beach, Nailsworth.

DISPENSER and Bookkeeper desires permanent berth with firm of Surgeons; 26; 12 years' experience; excellent references.—H. W., 3, Essex Villas, Garfield Rd., New Southgate.

ASSISTANT, willing, trustworthy and obliging; salary not so much an object as comfortable berth; Gloucestershire preferred, and outdoors; disengaged.—Chemicus, c/o Mr. Gilbert, Scorrier, Cornwall.

DISPENSER and Book-keeper to Surgeon, Chemist, Dispensary or Institution; mornings, evenings; part time or otherwise; qualified; experienced; excellent references.—Salicine, 8, Serle St., W.C.

YOUNG Man, aged 22, 7 or 8 years with late Public Analyst, seeks situation in a laboratory; large experience in iron ores, copper ores, waters, foods, etc.; careful and accurate worker; moderate salary.—Address by letter, J. H. C., c/o Street's, Serle St., W.C.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Wanted.—Check Till (British, Stoke's or Eclipse preferred).—Gentian, 8, Serle St., W.C.

Platinum; disused utensils and scraps.—P. Rowsell, 9, Derwent Grove, Dulwich.

OFFERED.

Gross 1s. Leath Ross's Homœopathics, 2½d. each.—Rhei, 8, Serle St., W.C.

Photographic Mounts.—500 assorted job slip-in mounts, 10s.—Edward Peck, East Dereham.

What Offers?—Scott's, Hayward's, Remsen's, &c.; Journals, '98, '99.—Jackson, Chemist, Sandiacre.

Selecta e Prescriptis, as new; what offers?—Gowen, Fleet, Hants.

2 × 100 gall. Steel Cylinders for Nitrous Oxide Gas, 35s.; 2 × 50 gall., 32s., cash.—399, Stanley Rd., Liverpool, N.

12 doz. bone-handled table knives, 96s.; in dozen lots, 8s. 3d.; money returned if not approved.—E. L. Wing, 9, Ranby Rd., Sheffield.

"The Lancet."—26 large well-bound volumes, 26s. 9d., or Exchange. Medical Pharmaceutical Lectures.—76, Sleaford Rd., Boston.

Chemist's Mineral Water Plant, complete; worked by hand; for syphons; perfect condition; £25.—Merchant & Co., Shakespeare St., Southport.

One each, £4 4s., £5 10s., £6 10s. gramophones, all in good condition; also 60 2s. 6d. records; offers wanted in cash or saleable patents.—Vincent, 460, Holloway Rd., N.

Four outside Wenham Lamps, very powerful, with advertising screens and lettering on ruby glass; just taken down from drug-stores; £8 the lot to clear.—Matthews & Co., 60, Battersea Rise.

Recipe.—Anæmia.—Copy of prescription for the cure of anæmia by a leading physician, renowned for his successful treatment of this complaint; P.O. 1s.—Address, Mr. J. Hardy, 14, Percy St., Hull.

Medical Books.—Dozen volumes Taylor's "Medical Jurisprudence," Habershon's "Stomach," Churchill's "Midwifery," &c.; published about £7; 15s., or Surgery drugs.—136, Great Portland St.

Croquet Set.—For disposal, very cheap, splendid set of County Club Croquet, consisting of 4 superior boxwood mallets, with large heads, 4 boxwood balls, painted regulation colours, set of stout narrow hoops, clips, drill, etc., in nice case complete; unused and perfect; only £1 14s. 6d.; worth £2 15s.; approval before payment.—Mr. P. Ralph, Cambridge House, Lakenheath, Suffolk.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

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Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows:—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

SOUTHERN HEALTH RESORT.—First-class Dispensing Business, old-established; returns, £1,450 at full prices; delightfully situated.—Phenol, Pharm. Journal Office, 8, Serle St., W.C.

£300 ALL AT.—Unopposed light Retail Dispensing and Prescribing Business; old-established; South coast; well fitted; owner retiring; great scope for increase.—Hydrastis, Pharm. Journal Office, 8, Serle St., W.C.

LANCASHIRE (Middleton).—For immediate Disposal, an old-established Chemist's Business, in the centre of the town; satisfactory reasons for selling.—Full information from Clark, Jackson & Clark, Solicitors, Church Lane, Oldham.

BLACKPOOL.—Chemist and Photographic Stock and Fixtures, new last year, to be Disposed of, proprietor having Medical Army Appointment; the shop, which is in best part of Blackpool, South Shore, can be had; low rental, £20. —Crosher, 1, Kensington Buildings, South Shore, Blackpool.

GRATIS.—Modern Shop in London, S.E., fitted as Chemist's, cost £100, with small amount of stock; owner going abroad; rent £65 per annum, on lease, which may be terminated in 4 or 18 years by tenant; new estate being developed opposite. —Apply, Cinchona, Pharm. Journal Office, 8, Serle St., W.C.

LIVERPOOL.—An old-established Retail and Dispensing Business for sale; proprietor having another business is not able to attend to both; personal attention would increase the business considerably; large stock, handsomely fitted; price, stock and fixtures at valuation, and £50. — Apply, Pharmacy, Pharm. Journal Office, 8, Serle St., W.C.

WEST-END.—High-class Dispensing Business for Sale through illness; situated in most exceptional position; producing a net income of about £1,000 yearly, with scope for making as much again; up-to-date Pharmacy, every modern convenience; early sale desired; small goodwill of only £400 will be accepted, plus valuation of stock and fixtures, together about £3,500; a unique opportunity for one or two men of securing a concern very seldom in the market; references should be enclosed to facilitate business.—Address, Protargol, Office of Pharm. Journal, 8, Serle St., W.C.

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All communications respecting advertisements should be addressed to the PUBLISHERS, 8, Serle Street, Lincoln's Inn, London, W.C.

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READING COVERS

Cloth, Gilt-lettered Covers, with strings, to hold twenty-six numbers of the ' PHARMACEUTICAL JOURNAL " may now be obtained.

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CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., Chemists' Transfer Agents, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

The Business conducted by Messrs. Orridge & Co., has been known as a Transfer Agency in the advertising columns of the Pharmaceutical Journal since the year 1846, and is well known to all the leading firms in the Trade.

VENDORS have the advantage of Messrs. O. and Co.'s direct attention and advice as to value without any additional fees.

PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

Terms for Valuation on application.

THOMAS TOMLINSON & SON

Chemists' Transfer Agents and Valuers,

9, NEW CANNON STREET, MANCHESTER.

VENDORS saved time and trouble by consulting before offering for sale PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address*, "Tomtom."

Messrs. BERDOE & CO.

Expert Stock-takers & Valuers

Stock-taking is a necessity, and we undertake the work at the smallest possible cost, and guarantee not to upset the routine of business in the slightest degree. Terms on application. Businesses sold, valued and investigated. Note the address:—

35, JEWRY STREET, FENCHURCH ST., CITY

Tenders

WEST BROMWICH DISTRICT HOSPITAL.

Tenders for Supply of Drugs.

PERSONS desirous of contracting for the supply of the above from July 1st, 1902, to December 31st, 1902, are requested to apply to me for a Form of Tender (no other will be received).

It is requested that all Tenders will be delivered (sealed) at the Secretary's Office before 10 a.m. on Monday, 16th June, 1902, endorsed "Tender for Drugs."

All Drugs must be quoted for "carriage paid."

The Board of Management do not bind themselves to accept the lowest or any Tender, and reserve to themselves the right of deciding in case of dispute with regard to the quality of any Drug supplied.

By order of the Board,
Clement Keys,
Secretary and Collector.

Board Room,
29th May, 1902.

RECOGNITION OF SPECIMENS.*

CLASSIFICATION OF THE U.S. PHARMACOPŒIAL GALENICALS.

Colourless—Limpid. (Type, water.)

ODOURLESS.

Tasteless.—Distilled water.

Characteristic Taste.—Solution of lime, solution of sodium arsenate, solution of lead sub-acetate, diluted solution of lead sub-acetate, solution of potash (soapy to touch and caustic), solution of potassium citrate, solution of soda (soapy to touch and caustic), solution of zinc chloride, and solution of hydrogen dioxide.

ODOUR.

Ether or Chloroform-like.—Spirit of ether, compound spirit of ether, chloroform water, and spirit of chloroform.

Aromatic.—Bitter almond water, anise water, orange flower water, cinnamon water, fennel water, peppermint water, spearmint water, rose water, spirit of bitter almond, spirit of anise, spirit of wintergeen, spirit of juniper, compound spirit of juniper, and spirit of lavender.

Pungent.—Ammonia water and spirit of ammonia.

Characteristic Odour.—Creosote water, solution of arsenous acid, solution of ammonium acetate, solution of mercuric nitrate, spirit of nitrous ether, spirit of camphor, camphor water, spirit of glonoin, and spirit of phosphorus.

Colourless—Viscid. (Type, syrup.)

ODOURLESS.

Characteristic Taste.—Solution of sodium silicate, glycerite of boroglycerin, mucilage of sassafras pith, syrup of hydriodic acid, syrup of the phosphates of iron, quinine and strychnine.

ODOUR.

Characteristic.—Aromatic elixir, elixir of phosphorus (elixirs may be classed between viscid and limpid), collodion, flexible collodion, syrup of citric acid, syrup of orange flowers, syrup of lime, syrup of calcium lactophosphate, syrup of hypophosphites, and glycerite of carbolic acid.

Colourless—Oily. (Type, rectified oil of turpentine.)

ODOUR.

Characteristic.—Ethereal oil and rectified oil of turpentine.

Yellow—Limpid. (Type, soap liniment.)

ODOUR.

Characteristic.—Vinegar of squill, soap liniment (soapy feel), chloroform liniment (soapy feel), solution of arsenic and mercuric iodide, solution of ferric nitrate and aromatic spirit of ammonia.

Tincture-like.—Tincture of bryonia, tincture of cardamom (yellow to amber), tincture of quassia, tincture of physostigma, tincture of squill, tincture of strophanthus and tincture of tolu (yellow to amber).

Aromatic.—Spirit of orange, compound spirit of orange, spirit of cinnamon, spirit of lemon, spirit of myrcia, spirit of nutmeg and solution of magnesium citrate (effervescent).

Yellow—Viscid. (Type, syrup of orange.)

ODOURLESS.

Mucilage of acacia and syrup of acacia (colourless to light yellow), mucilage of elm, syrup of althæa, decoction of cetraria.

ODOUR.

Characteristic Taste.—Clarified honey (yellow to yellowish brown), syrup of garlic, syrup of orange, syrup of lactucarium (yellow to yellowish brown), syrup of squill (almost colourless to amber), syrup of tolu (almost colourless to deep yellow), and syrup of ginger.

Yellow—Oily. (Type, camphor liniment.)

CHARACTERISTIC ODOUR.

Oleate of Veratrine, camphor liniment and phosphorated oil.

Light Red—Limpid. (Type, solution of iron and ammonium acetate.)

ODOUR.

Characteristic Odour.—Infusion of cinchona, infusion of digitalis, infusion of wild cherry, liniment of soft soap, solution of iron and ammonium acetate, solution of potassium arsenite, and wine of antimony.

Tincture-like and Characteristic.—Tincture of sweet orange peel, tincture of calendula, tincture of calumba, tincture of cantharides, tincture of capsicum, tincture of chirata, tincture of cimicifuga, tincture of cinchona, tincture of cardamom, tincture of colchicum seed, tincture of saffron, tincture of cubeb, tincture of gelsemium, tincture of nux vomica (varies from yellow to red), tincture of myrrh, camphorated tincture of opium, tincture of quillaja, tincture of stramonium seed, tincture of sumbul, and tincture of pyrethrum.

Light Red—Viscid. (Type, syrup of ipecac.)

ODOUR.

Syrup of hypophosphites with iron and syrup of ipecac.

Dark Red (or Reddish Brown)—Limpid. (Type, tincture of opium.)

ODOURLESS.

Solution of ferric citrate.

ODOUR.

Acetous.—Solution of ferric acetate and vinegar of opium.

Characteristic Odour and Taste.—Belladonna liniment, compound liniment of mustard, solution of ferric chloride, solution of ferric sub-sulphate, solution of ferric ter-sulphate, wine of ergot, bitter wine of iron, wine of ferric citrate, wine of colchicum root, wine of colchicum seed, wine of ipecac., wine of opium, aromatic sulphuric acid, compound decoction of sarsaparilla, compound infusion of senna, compound solution of iodine.

Tinctures, Characteristic Odour or Taste. — Tincture of aconite, tincture of asafetida, tincture of bitter orange, tincture of aloes, tincture of aloes and myrrh, tincture of arnica flowers, tincture of arnica root, tincture of belladonna leaves, tincture of benzoin, compound tincture of benzoin, tincture of Indian cannabis, compound tincture of cardamom, compound tincture of catechu, compound tincture of cinchona, tincture of cinnamon, tincture of digitalis, tincture of ferric chloride, tincture of nutgall, compound tincture of gentian, tincture of guaiac, ammoniated tincture of guaiac, tincture of hops, tincture of hydrastis, tincture of hyoscyamus, tincture of iodine, tincture of ipecac. and opium, tincture of kino, tincture of krameria, tincture of lactucarium, compound tincture of lavender, tincture of lobelia, tincture of musk, tincture of matico, tincture of opium, deodorised tincture of opium, tincture of rhubarb, aromatic tincture of rhubarb, sweet tincture of rhubarb, tincture of sanguinaria, tincture of serpentaria, tincture of valerian, ammoniated tincture of valerian, tincture of vanilla, tincture of veratrum viride, tincture of ginger.

Dark Red (or Reddish Brown)—Viscid. (Type, syrup of wild cherry.)

ODOUR.

Characteristic Odour or Taste.—Honey of rose, glycerite of tannic acid, glycerite of hydrastis, styptic collodion, cantharidal collodion, syrup of krameria, syrup of tar, syrup of wild cherry, aromatic syrup of rhubarb, syrup of rose, syrup of rubus, syrup of raspberry, compound syrup of sarsaparilla, compound syrup of squill, syrup of senega, and syrup of senna.

Green—Limpid. (Type, spirit of peppermint.)

ODOUR.

Characteristic Odour and Taste.—Chlorine water, solution of chlorinated soda, spirit of peppermint and spirit of spearmint.

Green—Viscid.

Characteristic Odour and Taste.—Syrup of ferrous iodide.

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* From the *Alumni Report*. Continued from the *P.J. Inset* of May 17, 1902, page 15a.

SOCIETY AND ASSOCIATION NEWS.

Edinburgh Chemists', Assistants', and Apprentices' Association.—The first botanical excursion of the Summer Session took place on the evening of Friday, May 30, leaving Caledonian Station at 8.30 p.m., for Colington, under the leadership of Mr. W. B. Cowie. The weather, most unfortunately, was excessively cold and wet. Nevertheless, nearly forty members and friends turned out and a wonderfully successful excursion took place, the party returning by train from Colington at 9.25 p.m., instead of by road, as was originally intended. The effects of the phenomenally cold spring were everywhere visible. Only on one favourably situated hawthorn were the blossoms beginning to open, and vegetation everywhere was at least five or six weeks behind time. Among the specimens collected were:—*Ranunculus ficaria*, *R. repens*, *Berberis vulgaris*, *Fumaria officinalis*, *Cardamine pratensis*, *Capsella bursa-pastoris*, *Sinapis arvensis*, *Viola canina*, *Lychnis diurna*, *Cerastium vulgatum*, *Tilia europæa*, *Acer pseudo-platanus*, *Geranium robertianum*, *Vicia hirsuta*, *Lotus corniculatus*, *Ulex europæa*, *Cytisus scoparius*, *Geum urbanum* and *G. intermenium*, *Cratægus oxyacantha*, *Alchemilla vulgaris*, *Fragaria vesca*, *Pyrus sorbilis* and *P. aucuparia*, *Sedum telephium*, *Saxifraga umbrosa*, *Chærophyllum sylvestre*, *Bunium flexuosum*, *Myrris odorata*, *Ægopodium podagraria*, *Galium aparine*, *G. cruciata*, *Taraxacum officinale*, *Tussilage farfara*, *Achillæa millefolium*, *Senecio vulgaris*, *Symphytum tuberosum*, *Myosotis arvensis*, *Lamium album* and *L. rubrum*, *Nepeta glechoma*, *Primula vulgaris*, *Plantago major* and *P. lanceolate*, *Rumex sanguinea*, *R. acetosa* and *R. aquatica*, *Mercurialis perennis* (male), *Urtica dioica*, *Ulmus campestris*, *Luzula campestris*, *Scilla nutans*, *Allium ursinum* and *Equisetum palustre*.

Edinburgh Pharmacy Athletic Club.—The eleventh annual athletic sports of the club took place on Wednesday, June 4, at Powderhall, at 6.45 p.m. Despite the fact that the day had been wet and dull, there was a large attendance. Towards evening the rain stopped, and the sports were carried out without a single hitch. The judges in the confined events were Dr. George Coull and Mr. J. Rutherford Hill, and Messrs. J. P. Gibb, D. S. Napier, and G. H. C. Rowland acted as handicappers. The prize-takers in these events were as follows:—One Mile Bicycle Handicap—1, J. J. Sutherland; 2, W. C. Taylor. 300 Yards Flat Race (confined to apprentice members)—1, G. H. Clarke; 2, J. A. Gray. 220 Yards Flat Race Handicap—1, J. Murray; 2, G. H. Clarke; 3, W. P. Anderson. Tug-of-War—Messrs. J. F. Macfarlan and Co.'s team retained possession of the McIlwrick Challenge Cup against T. and H. Smith and Co. and Inman's, Limited. Half-Mile Flat Race Handicap—1, J. M. Hendry; 2, G. H. Clarke; 3, J. Murray. Five a-side Football Match—T. and H. Smith and Co. beat Inman's, Limited, by one goal to nothing. Dr. W. Inglis Clark presided at the presentation of prizes and warmly congratulated the club on the energy and success with which the sports had been carried out notwithstanding the unpromising weather. Great credit was due to the president, Mr. Gibb, and the secretary, Mr. D. S. Napier, and the committee for the excellence of the arrangements. The prizes were then handed to the successful competitors by Mrs. Inglis Clark, who was presented with a magnificent bouquet of flowers. On the motion of Mr. Gibb, a vote of thanks was awarded to Mrs. Inglis Clark and Dr. Inglis Clark. Prizes were given by Burroughs, Wellcome, and Co., Mr. David Brown, Duncan, Flockhart, and Co., R. Gibson and Sons, Limited, Harkness, Beaumont, and Co., S. Maw, Son, and Sons, Mr. Thomas Ilwrick, Raimes, Clark, and Co., and T. and H. Smith and Co.

SCHOOL AND COLLEGE NEWS.

South London School of Pharmacy.—The students of this school on Monday last sent a telegram to the King expressing their respectful congratulations on the ending of the war before His Majesty's Coronation, to which the following gracious reply was received:—"The King thanks you for your loyal congratulations on the conclusion of hostilities in South Africa."

London College v. Metropolitan College.—A match played at Nunhead on Saturday, May 31, resulted in a win for London by ten wickets. Scores:—Metros., 14 and 37; London, 47 and 5 for no wicket. The feature of the game was the rapid dismissal of the Metros. in their first innings, a result due to the excellent bowling of Hands (five wickets for five runs), and to the smartness of the London fielding, no less than four men being run out. In the second innings Fry took five wickets for twelve. The chief scorers were:—For the Metros., Kendal, 7; Salmon, 7; and Thomson, 7. For London, Whitehouse, 13; Jones, 8; Williams, 7.

Westminster College of Chemistry and Pharmacy, Limited.—The annual conversazione was held on Friday, May 30, in the King's Hall, Holborn Restaurant. The guests, who numbered over 300, were received by Mr. George S. V. Wills (the Principal) and Mrs. Wills. An excellent programme of vocal and instrumental music was rendered. Before the conclusion of the proceedings medals and certificates were presented by Dr. Alfred Matcham to the following successful students:—Chemistry, Messrs. A. H. Penistan, J. Talbot, L. S. Willox; Botany, B. Beckley, R. M. Holmes, W. C. Sumption; Materia Medica, J. E. Hyde, A. J. McCabe, E. G. Watts; Pharmacy, F. W. Beken, J. Talbot, G. T. Walker; Dispensing, G. H. Bartleman, H. H. Cannon, J. E. Hyde.

MISCELLANEOUS NEWS.

An Overdose of Ammonium Chloride.—Reading in a newspaper that ammonium chloride was good for internal pains, an Aberdeen sufferer—one of the gentler sex—was so reckless as to send the other day for fourpence-worth of the "cure," and gulp it down at one draught. The woman now lies in the local infirmary, the ammonium chloride not having had the desired effect.

'Holidays in Eastern Counties' is the title of a handbook, edited by Mr. Percy Lindley, and published by the Great Eastern Railway Company, at 30, Fleet Street, E.C., containing much interesting information concerning the holiday resorts of the Eastern Counties, particulars of circular tours, cheap return tickets, hotel accommodation, etc. Those who are beginning to think about holidays should apply to the publishers for a copy of the new edition of this handbook, which is supplied gratis, prominence having been given to some of the less known districts of East Anglia, while the illustrations have been made a special feature.

The Priming of Fireworks offers an opportunity for the exercise of the chemical inventor's ingenuity, since Captain Thomson, who has recently reported to the Home Office on an accident in the drying-house for coloured stars at the factory of the Blenheim Engineering Company, at Greenwich Marshes, states that he is convinced of the difficulty of finding an efficient priming which is free from the dangers now attendant on priming a chlorate star with gunpowder. He says manufacturers should use every endeavour to discover such a priming, or by a modification do away with the necessity of priming altogether. The suggestion is also made that, for greater convenience, manufacturers might combine together and appoint a small committee to carry out experiments, in connection with which any possible assistance would be readily given by the Home Office.

A New Source of Nitre is referred to in the *Manchester Courier*, which reminds its readers that nearly four years ago Sir William Crookes, in his presidential address to the British Association, pointed to the vast stores of nitrogen in the atmosphere as a possible source from which the world's wheat supply might be able to keep pace with the spread of the Caucasian races. The value of the suggestion was undeniable, but it was generally believed that until the Chili nitrate beds gave out the artificial product would be unable to compete with the natural. Lately, however, a company has been started with the object of "fixing" atmospheric nitrogen by electricity derived from Niagara Falls. The process is said to be extremely simple, consisting merely in oxidising the nitrogen by raising it to a sufficiently high temperature, such as the electric arc provides, and absorbing the product by means of some alkali, such as potash or soda.

Chemists' Exhibition at Manchester.—The eighth chemists' exhibition was opened at the St. James's Hall, Manchester, on June 3, and remained open until June 6. It was the second exhibition of its kind which had been held in Manchester. The principal wholesale and manufacturing houses had sent exhibits of their wares, and an attempt was made to indicate the advances which are effected from time to time in the preparation of pharmaceutical and chemical requirements. Some of the stands were arranged with considerable taste, some of the exhibitors having pressed into service, with excellent effect, pretty art muslins, bright flowers, and foliage plants of tender green. One firm had even ventured to introduce a thatched summer-house into the centre of its display. The articles shown upon the stands were, of course, remarkable for their variety. There were food extracts and homœopathic medicines, photographic outfits and feeding bottles, surgical instruments and aerated waters, invalid jellies and scented soaps. There were in all some ninety stands, and the exhibition was as extensive and as representative as any which have preceded it.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. A. C. Wootton, member of the Pharmaceutical Society's Council, is reported to be seriously ill.

Mr. W. Fletcher Gadd, pharmaceutical chemist, has disposed of his business at 59, Queen Street, Ramsgate.

Mr. P. A. Kelly, chemist and druggist, has been appointed dispenser to the South Devon and East Cornwall Hospital, Plymouth.

Mr. Charles Brown, pharmaceutical chemist, of Northallerton, has purchased the business formerly carried on by Mr. I. A. Jones, 161, Bury New Road, Manchester.

Mr. Arthur Edward Ekins, M.P.S., F.I.C., F.C.S., the Mayor of St. Albans, is the subject of an illustrated article in a new book, entitled 'Mayors of England and Wales (Coronation Year, 1902).'

Miss C. M. Fox, chemist and druggist, has been appointed dispenser at the St. Pancras Workhouse, at a salary of £110 per annum. There were thirty-four candidates for the appointment, four being pharmaceutical chemists and twenty-one chemists and druggists.

Mr. A. Sidney Campkin, J.P., of Cambridge, was on Friday last re-elected Chairman of the Assessment Committee, a position he has held for upwards of fifteen years. This Committee, which is composed of representatives from the Board of Guardians, Town Council, and University, have during that time revalued the whole of the Town and University Buildings without professional assistance.

Mr. Robert J. Roberts, M.P.S., of Towyn, has presented the Dolgoch Estate, which is noted for the great beauty of its waterfalls and the scenery of the locality, to the town of Towyn. Mr. Roberts, who is a native of Dyffryn Ardudwy, Merioneth, started a successful business as a chemist at Towyn in 1867, and in 1893 he purchased the Dolgoch Estate, which, apart from its beautiful scenery, is a place of historic interest, as in 1333 it was the residence of Sir Griffith ab Adda, raglat (governor) of the Commote of Ystummaner—an ancestor of the Wynnes of Peniarth and of the Corbets of Ynysmaengwyn.

COMPANY INTELLIGENCE.

C. A. Regent, Limited.—This company was registered on May 23, with a capital of £1,000 in £1 shares, to carry on the business of chemists and druggists, and manufacturers of, and dealers in, proprietary articles, scientific, surgical, and optical instruments, etc. No initial public issue. Registered without articles of association. Registered office, 77, Victoria Street, S.W.

Cheap and Good, Limited.—This company was registered on May 26, with a capital of £5,000 in £1 shares, to carry on the business of manufacturers, drysalters, chemists; also the business of a general supply association in all its branches. The first directors (to number not less then three nor more than seven) are to be afterwards appointed. Qualification, fifty shares. Remuneration as fixed by the company. Registered office, 166, Buchanan Street, Glasgow.

Raybould, Whitehouse and Co., Limited.—This company was registered on May 26, with a capital of £7,000 in £1 shares, to acquire the business carried on by G. Raybould and J. Whitehouse, as Raybould, Whitehouse, and Co., at Dudley, Worcestershire, and to carry on the business of chemists, druggists, vendors of patent medicines, drysalters, oil and colourmen, druggists' sundriesmen, etc. No initial public issue. The directors are G. Raybould and J. Whitehouse. Qualification, £1,000. Registered office, Reform Works, Wellington Road, Dudley, Worcestershire.

Sudlow and Clapham, Limited.—This company was registered on May 21, with a capital of £2,000 in £1 shares, to adopt an agreement between T. W. Sudlow of the one part and J. R. Clapham (for this company) of the other part, to acquire the business carried on at 158, High Street, Stockton-on-Tees, by T. W. Sudlow, and to carry on the business of chemists and druggists, dealers in mineral waters, manufacturers of, and dealers in proprietary articles, chemical, photographic, surgical, scientific, and other apparatus, etc. No initial public issue. The first director is J. R. Clapham. Qualification, £100. Remuneration as fixed by the company. Registered office, 158, High Street, Stockton-on-Tees.

Liebig's Extract of Meat Company, Limited.—The ordinary general meeting of Liebig's Extract of Meat Company, Limited, was held on June 2 at the City Terminus Hotel, Cannon Street. Mr. C. E. Gunther, who presided, said that considering the various elements which influenced the business, the shareholders might, he thought, congratulate themselves on the results. The year's profit was within £5,000 of the figures of last year, which was a very good one, enabling them to pay the same dividend on the ordinary shares as during the past five years, viz., 20 per cent., and to carry £5,000 to reserve fund, raising it to £120,000. In spite of the severe drought which had affected the River Plate, the company had escaped comparatively lightly. In purchasing estancias they had always selected those with the best quality of grass, and well watered; while the managers had instructions not to overstock them, especially during a dry season, when drought threatened. The company's risks were thus reduced to a minimum. Were the company's estancias contiguous, they would cover an area equal to almost the whole of the county of Herefordshire, and a cattle expert, who lately made an inspection, had sent most flattering reports of the herds. The sales of the extract all over the world had continued most satisfactory, and the new trade-mark—Lemco—was becoming firmly established. The steady increase of the business was the most gratifying proof of the correctness of their policy of maintaining their cattle farms, factories, and other departments in the highest efficiency, and subordinating the whole to the scientific control of three of the most celebrated chemists of England and Europe. Oxo, the new fluid beef, continued also to make steady progress, especially among the medical profession and hospitals. During the past year the orders from His Majesty's War Office had naturally been considerably smaller than when the war was at its height, but the shareholders would be glad to know that in the coming year those orders will more nearly approach the normal peace level. On this happy day they had special cause to rejoice in the glad news of peace, which was welcomed with enthusiasm by the whole world, for they had the pleasure of knowing that they had been the direct means of alleviating the sufferings and probably saving the lives of thousands of brave British soldiers, and also of their new friends the Boers. The work of the company was to make the sick well, to give strength to the wounded, and to add to the comfort of living by ministering to greater efficiency in cooking; and therefore, if the war which had just terminated had occasionally been a strain on their resources, they might look for a still greater volume of business from South Africa as that country gradually but surely develops under the happy reign of peace. The report was unanimously adopted, and at an extraordinary general meeting formal resolutions were agreed to, adapting the articles of association to present requirements.

MARKET REPORT.

London, Thursday, June 5, 1902.

This being Derby week, business has received a quite unnecessary check, while the long hoped for peace in South Africa has so far brought no improvement. Of course, it is too early yet to say that this will not still be the case; in fact, it is practically certain that sooner or later the orders which must be placed with a view to making good the "waste of war" in South Africa cannot fail to have a beneficial influence on business generally. Meanwhile it can only be said that there is great need of improvement, for things remain desperately dull. With the exception that price of Sulphate of Quinine in the speculative market has suffered a further relapse, there are no changes of any importance to record. We give below some ruling quotations:—

ACID BORACIC.—Crystals 22s. per cwt., powder 24s.

ACID CITRIC—Is quiet at 1s. 0¼d. to 1s. 0½d. per lb., according to quantity and make, for crystals, in 5 cwt. barrels.

ACID CARBOLIC.—Quiet on basis of 6⅛d. to 6¼d. per lb. for 34-35° ice crystal in large bulk packing.

ACID OXALIC.—Unchanged at 2⅝d. per lb. nett, free delivered in London.

ACID TARTARIC.—English is quoted 11½d. per lb. on the spot and foreign 10½d.

ALUM.—Lump £5 10s. to £5 12s. 6d., and ground £6.

ASHES.—Pots 25s. 9d., pearls 40s.

BENZOLE—Flat. 50 per cent. prompt 7d. to 7¼d., 90 per cent. 8d. to 8¼d. London.

BICHROMATE OF POTASH.—3d.

BICHROMATE OF SODA.—2¼d.

BISMUTH SALTS—Are unchanged at 5s. 5d. per lb. for the Subnitrate and 5s. 11d. per lb. for the Subcarbonate.

BORAX.—Crystals 13s. per cwt., powder 14s.

BROMIDES—Are firm at unchanged prices.

CAMPHOR.—The market is without change, and a quiet tone prevails. The monopoly price of Formosa Crude is 137s. 6d. to 145s., according to quality, and 160s., c.f. and i., for Pressed. For refined English makers still quote 2s. 3½d. per lb. for Bells and Flowers and proportionate unchanged prices for Tablets, according to size.

CHLORATE OF POTASH.—Spot London crystals 3d. to 3¼d. net, powder 3d. to 3¼d.

CINCHONA BARK.—The shipments of Java during May were 1,030,000 Amsterdam lbs. against 730,000 Amsterdam lbs. last year, and 816,000 Amsterdam lbs. in 1900. The total for the five months is 4,130,000 Amsterdam lbs., against 4,112,000 Amsterdam lbs. last year, and 3,234,000 Amsterdam lbs. in 1900.

COD LIVER OIL.—In consequence of adverse reports as to result of the fishing, price has sharply advanced, and as much as 135s. per barrel has been paid for single barrels of good brand on the spot, while it would hardly be possible to buy larger quantity, even at this price. We think, however, that buyers would do well, at present, to confine their purchases strictly to their immediate wants.

CREAM OF TARTAR—Is firmer at 72s. per cwt. for first white crystals on the spot. Powder 74s., ditto foreign 98 per cent., 77s. 6d. per cwt.

ESSENTIAL OILS.—The position of most articles remains unchanged. There has been little demand, and few sales of importance have taken place. Peppermint: American HGH is steady at 8s. 10½d.; Japan dementholised rather more doing at 3s. 9d. for Kobayashi. Cassia easier: 30 cases offered in auction and 20 sold, without reserve, 70 to 75 per cent. Cinnamic Aldehyde at 2s. 1½d., and 78 per cent. at 2s. 3d. For arrival 70 to 75 per cent. sold at 2s., and sellers of 80 to 85 at 2s. 3d., c.f. and i. Star Aniseed dull and unchanged at 4s. 3d. spot, the last quotation to arrive being 4s. 2d., c.f. and i. Citronelle remains quiet at previous rates. Lemongrass unchanged at 5½d. to 6d.

GLYCERIN.—Refined is steady at 67s. per cwt. for five-ton lots for best white, odourless, double-distilled, chemically pure, 1·260 S.G. quality, in tins and cases (2 or 4 × 56 lb. tins in a case).

IODIDES.—The combined makers made no change, but outside makes are still being offered in limited quantities below convention prices.

MENTHOL—Has remained firm, although quiet. For Kobayashi on the spot 14s. 3d. is now asked.

MERCURIALS—Are steady at unchanged prices.

MORPHINE.—Very dull at 3s. 10d. per oz. for the Hydrochlorate powder on contract, and 2d. per oz. more for the Crystalline salt.

NITRATE OF SODA.—Commercial spot £9 5s. per ton. Refined £9 15s

OILS (FIXED) AND SPIRITS.—Linseed Oil dull. London spot pipes £32 to £32 5s., barrels £32 5s., month £32, July-Aug. £32, Sept.-Dec. £31. Hull naked spot £31, June-Aug. £31, Sept.-Dec. £29 17s. 6d. Rape Oil steady. Ordinary Brown on the spot barrels £25 15s. to £26, July-Aug. £26, Sept.-Dec. £26. English Refined spot £27 10s. Ravison not offering. Cotton Oil easier. London Crude spot £25, July-Aug. £25. Refined spot £27 to £27 15s. Hull naked Refined spot £24 12s. 6d., July-Aug £24 12s. 6d., Nov.-April £21 15s. Crude Spot £23 12s. 6d., June-Aug £23 12s. 6d., Nov.-April £20 15s. Olive Oil quiet. Mogador £31, Spanish £31 10s., Levant £31. Cocoanut Oil quiet. Ceylon spot £33 10s., May-June £30 17s. 6d. c.i.f., June-July £30 10s. c.i.f., Aug.-Sept. £30 10s. c.i.f. Cochin spot £37, April-May £33 15s. c.i.f., Aug.-Oct. £32 15s. c.i.f. Mauritius £33. Palm Oil dull. Lagos on the spot £29. Lubricating Oil: Pale American spot quoted £5 12s. 6d. to £7 10s., Black £5 to £6, Russian Black £5 to £6, pale £6 15s. to £7 10s. Turpentine very firm and more active at the advance. American spot 35s. 3d. to 35s. 6d., June 35s., July-Aug. 34s. 3d., Sept.-Dec. 34s. to 34s. 3d., Jan.-April 34s. 6d. to 34s. 9d. Petroleum Oil quiet. Russian spot quoted 5⅞d. to 6⅜d. American spot 6⅝d. to 6⅞d., Water White 7⅝d. to 7⅞d. Refined Roumanian on spot 5¾d. to 5⅞d. Petroleum Spirit: American Ordinary 8d., Deodorised 8¼d.

OPIUM.—The reports as to the new crop are somewhat conflicting. The general impression appears, however, to be that unless something unforeseen happens same will be large, and if this be the case, then price, which is already low enough at 7s. 3d. per lb. on the other side for manufacturing quality, would appear likely to still further recede. Here the article is dull and weak, with practically nothing doing.

QUICKSILVER.—The importer still asks £8 15s. per bottle.

PHENACETIN.—Price here having been advanced, as reported last week, to 6s. to 6s. 7d. per lb. for crystals or powder, it now transpires that on the Continent makers supply at more than a shilling per lb. below these figures, according to quantity. It is really time that a firm stand was, by some means or other, made against such manipulations, which can only have the object of bleeding British consumers and handicapping British trade.

PRUSSIATE OF POTASH—Quiet. English makes 5¼d. Beckton 5d.

QUININE.—Makers of the favourite German brands, B and S and Brunswick, still quote 1s. 3d. per oz. for the sulphate for 1,000 oz. lots in 100 oz. tins, while in the speculative market—partly in consequence of the unexpected or, at least, unhoped-for comparatively large shipments of Cinchona Bark from Java for the past month, and partly of the fact that there must be many weak holders, combined with what appears to be a general disinclination to anything like speculative buying—the article has turned very weak with sellers of above-named brands at 1s. 0¼d. to 1s. 0½d. per oz., being 2½d. per oz. below makers' price. It is feared that unless the position changes we may see even lower prices. The landings during May were 27,984 oz. and the deliveries 49,424 oz., making the stock on May 31, 3,824,368 oz., against 3,558,032 in 1901.

SHELLAC.—The Calcutta price of TN Orange is cabled rather higher at 52r. 8a. The market here exhibits a firmer tone, with better prices. The demand on the spot has been rather slow, and only small sales have occurred. Futures are firm and dearer, with a good business passing. Call prices:—June, TN, 109s. sellers, 107s. buyers; July, 109s. sellers, 107s. 6d. buyers; August, 109s. sellers, 108s. buyers; September, 111s. sellers, 108s. buyers; October, 112s. sellers, 110s. buyers. The sales include fully 2,000 cases, June delivery at 108s. to 108s. 6d., July at 109s., August at 108s. to 109s., September at 108s. to 108s. 6d., and October at 110s. to 111s. and sellers.

SULPHATE OF AMMONIA—Quiet. Gray 24 per cent. London prompt £13 Hull prompt £12 12s. 6d. to £12 13s. 9d. Leith prompt £12 15s. Beckton July-September £13, October-March £11 7s. 6d. Beckton terms prompt £12 17s. 6d.

SULPHATE OF COPPER.—Spot quoted £18 to £19.

SULPHONAL—Is still at starvation prices, Bayer's make being still obtainable in limited quantity at 5s. per lb. for crystals or powder in bulk paper parcels.

BUY FROM THE DIRECT IMPORTERS

SPONGES

FOR CHEMISTS' TRADE.

I. & M. COHEN

Sponge Merchants, Importers and Exporters,

Contractors to H.M. Government,

25 & 54, HOUNDSDITCH, & 66, ST. MARY AXE

LONDON, E.C.

Every Description always on hand.

PHOTO LABELS,

CIRCULARS,

etc.

NEW SAMPLES NOW READY.

JAMES TOWNSEND & SON,

Label & General Printers,

EXETER AND LONDON.

EVERYONE

acknowledges that

JEWSBURY & BROWN'S

MINERAL WATERS

ARE UNEXCELLED.

Ardwick Green, Manchester.

DIARY OF THE WEEK.

Tuesday, June 10.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square. W.C.—Finance and Other Committees.

ROYAL PHOTOGRAPHIC SOCIETY, 66, Russell Square, W.C., at 8 p.m, —Professor J. C. Bose on "The Strain Theory of Vision and of Photographic Action."

Wednesday, June 11.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, W.C., at 11 a.m.—Meeting of the Council.

PUBLIC DISPENSERS' ASSOCIATION, St. Bride's Institute, Ludgate Circus, E.C., at 8 p.m.—Special General Meeting.

Friday, June 13.

ROYAL INSTITUTION, Albemarle Street, Piccadilly, W., at 9 p.m.—"The Progress of Electric Space Telegraphy," by G. Marconi.

Saturday, June 14.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, W.C. Entries close for July Examinations.

PUBLICATIONS RECEIVED.

THE IDLER. June, 1902. Pp. 387-480. Price, 6d. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. From the Publishers.

MERCK'S PHOTOGRAPHIC CHEMICALS. Pp. 65. London: E. Merck (Darmstadt), 16, Jewry Street, E.C. From the Publisher.

SEMI-ANNUAL REPORT OF SCHIMMEL AND Co. (Fritzsche Brothers), Miltitz, near Leipzig, London, and New York. Pp. 101. April, 1902. From the Publishers.

PHYSIOLOGICAL AND PATHOLOGICAL CHEMISTRY. By G. BUNGE. Second English Edition, translated from the fourth German edition by Florence A. Starling, and edited by Ernest H. Starling, M.D., F.R.S. Pp. xi. + 476. Price 16s. London: Kegan Paul, Trench, Trübner and Co., Limited, Paternoster House, Charing Cross Road, W.C., 1902. From the Publishers.

CITY AND GUILDS OF LONDON INSTITUTE, REPORT OF THE COUNCIL TO MEMBERS OF THE INSTITUTE. Pp. xxxiv. + 137. April, 1902. London: Gresham College, Basinghall Street, E.C. 1902. From the Secretary.

THE WATKINS MANUAL OF EXPOSURE AND DEVELOPMENT. By A. WATKINS. Pp. 136. Price, 1s. nett. London: Geo. Houghton and Son, High Street, Holborn, W.C. 1902. From the Publishers.

TRADE NOTES AND NOVELTIES.

CORONATION FESTIVITIES.—Messrs. Wright, Layman and Umney, Limited, 48, Southwark Street, London, S.E., intimate that their warehouses, offices and laboratories will be entirely closed on Thursday, June 26, and Friday, June 27. They will therefore esteem it a favour if friends will anticipate their requirements as far as possible.

AMERICAN SODA FOUNTAINS.—Messrs. Stiles, Ltd., 72-74, Gray's Inn Road, Holborn, W.C., the sole British representatives of the American Soda Fountain Co., of New York, send a copy of their catalogue of American soda fountains and soda water supplies. The catalogue is profusely illustrated, showing numerous styles of fountains and the various accessories. All chemists who are thinking of starting a "soda fountain" should procure a copy of this catalogue.

'SOMETHING ABOUT FLIES' is the title of a booklet published by Messrs. Kay Brothers, Limited, St. Petersgate Mills, Stockport, in connection with the advertising of their "Vampire" spiral flycatcher. A copy of the booklet, which contains some interesting extracts from a paper read before the Stockport Literary Club by John Good, M.R.C.S., L.S.A., will be sent to any reader of the *P.J.* who applies for one, enclosing a billhead or business card. The "Vampire," as we have previously mentioned, is a perfect flycatcher which bears a good profit to the retailer, and can be obtained from any of the wholesale houses or direct from the manufacturers.

THE "CRYSTALATE" DISH.—Messrs. Geo. Houghton and Son, 88-89, High Holborn, W.C., are introducing a beautifully moulded and polished photographic dish under the name of "The 'Crystalate' Dish." It resembles ebony in appearance, is hard, durable, impervious, pleasant to handle and easy to clean. The dish is made in three sizes and of two qualities—ordinary and high grade, the latter being of a heavier substance, and brown instead of black. The prices are as follow:—"Ordinary" 4¼ × 3¼, 4d. each; 5 × 4, 6d.; 6½ × 4¾, 9d. "High grade" 8d., 1s., and 1s. 6d. respectively.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Alcock, Bambrough, Black, Campkin, Chambers, Clarke, Denny, Evans, Ferrall, Goldby, Hill, Holmes, Hornsby, Jones, Matthews, Mawer, Miller, Morgan, Mumbray, Nelson, Nunn, O'Halloran, Ord, Phillips, Pickering, Samuel, Spurin, Taplin, Walker, Whineray, Young.

Pharmaceutical Journal

SATURDAY, JUNE 14, 1902.

Advertisements for insertion in the current issue of this Inset are received up to 4 p.m. Thursday each week at the Publishing Office, 8, Serle St., London, W.C.

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Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

WANTED immediately, qualified DISPENSER.—State salary required (indoors), references and usual particulars, MARTINDALE, 10, New Cavendish St., W.

UNIVERSITY COLLEGE HOSPITAL, W.C.

PART-TIME LOCUM for summer holidays, July-Sept.—Apply by letter, stating age, qualification, &c., to the HEAD DISPENSER.

MANAGER wanted; qualified; married; Extractor; for light country Retail; house and gas free.—State age, height, salary required, with photo and references, to BRICE, Chemist, Leicester.

LONDON, W.—A Junior ASSISTANT, one just out of apprenticeship; aged about 20.—Apply, stating full particulars, to C. M. Q., c/o Messrs. Hodgkinson, Clarke & Ward, 101, Whitecross St., E.C.

BIRMINGHAM.—Gentlemanly JUNIOR or IMPROVER; passed Preliminary preferred; good opportunity for experience. —Send particulars, with salary required, to SOUTHALLS, 17, Bull St., Birmingham.

SOUTH KENSINGTON.—Messrs. PLAISTER & Co., 13, Gledhow Terrace, South Kensington, will require, in July, a qualified ASSISTANT, of good experience; rooms provided, board out.—When applying, state salary required, &c.

BATH.—ASSISTANT wanted, at once, with experience, in select Dispensing establishment, and qualified; two kept.—Apply, stating experience, salary required (indoors), &c., WHISTON & Co., Chemists, St., James' Sq., Bath.

WANTED, qualified and thoroughly competent ASSISTANT, having had good previous experience and not under 25, for first-class West-End Dispensing business; three kept.—Apply to X., c/o Messrs. Barron Harveys, 6, Giltspur St., E.C.

APOTHECARIES' HALL.—GENTLEMAN with Minor qualification wanted for Dispensing counter.—Write in first instance giving full particulars as to age, experience, etc., to THE SUPERINTENDENT, Apothecaries' Hall, Blackfriars, E.C.

Assistants Wanted—Continued

LONDON, W.—A West End Dispensing house requires two qualified ASSISTANTS (2nd and 3rd); must be men of good training, and experience of Dispensing; outdoor.—State full particulars to PHARMAKOS, Pharm. Journal Office, 8, Serle St., W.C.

ISLE OF WIGHT.—Capable ASSISTANT wanted; light Retail Dispensing and Photographic business; hours easy; three months' engagement; outdoors.—Apply, with full particulars and photo, to W. H. LITTLEFIELD, Pharmaceutical Chemist, Ventnor, I.W.

LONDON, S.W., near Schools.—Indoor ASSISTANT, accustomed to good-class trade; two evenings off weekly and one hour daily; two kept; salary £40.—Send photo and all particulars, or call.—F. GLEW, Chemist and Radiographer, 156, Clapham Rd.

NATAL.—Qualified ASSISTANT wanted for principal town; good opening for smart man; salary, £16, £18 and £20 per month (outdoor); three years' agreement to be signed; second-class passage advanced.—Apply, C. W. S., c/o Pharm. Journal, 8, Serle St., London, W.C.

QUALIFIED ASSISTANT (indoors) for good Retail and Dispensing business; must possess good references and be neat and accurate Dispenser.—Write, giving full particulars and when disengaged, to INVICTA, c/o Messrs. Hodgkinson, Clarke & Ward, 101, Whitecross St., E.C.

WANTED, competent ASSISTANT as Senior in Dispensing business in good provincial town near London; good experience and address necessary.—Send particulars, with photo, stating salary (indoors or outdoors), to AQUA, c/o Messrs. Hearon, Squire & Francis, 38, Southwark St., London, S.E.

A FRENCH speaking qualified ASSISTANT required shortly for London; age about 25; hours moderate and a good progressive salary to be given; qualification and good-class experience essential.—Apply, giving fullest particulars of age, height, experience and salary expected, to PHARMACIEN, Pharm. Journal Office, 8, Serle St., W.C.

CAPE TOWN.—Qualified ASSISTANT wanted for good-class Chemist's business; young man; smart, quick, and accurate Dispenser; salary £14, £15 10s. and £17 per month for first, second and third years respectively; room supplied, but not board; three years' agreement; second-class passage.—Apply, with full particulars, to D. K., c/o Pharm. Journal, 8, Serle St., London, W.C.

Continued on next page.

Assistants Wanted—Continued

INDIA, Hyderabad.—Wanted qualified Assistant; age about 25; must have practical knowledge of Mineral Water trade and good retail experience; three or four years' engagement; good salary; second-class passage paid out and £5 allowed for incidental expenses on the voyage; furnished apartments found; no board.—Apply, Lorimer & Co., Ltd., Britannia Row, Islington, N.

DURBAN, NATAL. — Assistant required immediately; Minor qualification; knowledge of Photography an advantage; salary 1st year, £14 per month; 2nd year, £15 per month; 3rd year, £16 per month; increased, if satisfactory, on completion of 3 years' agreement; outdoors; second class passage paid out.—Apply, with references, to S., care of Bryce & Co., 23, St. Mary Axe, London, E.C.

CAPE COLONY.—Assistant, immediately. Must be single, possess the Minor qualification, about 25 years of age, and have had good experience in a country business. Also a good and neat Dispenser. Steady and sober habits indispensable. Salary, 1st year, £140 per annum; 2nd year, £150; 3rd year, £160. Sleeping accommodation provided, or equivalent (outdoors), but to find own board. Second-class passage paid out, conditional on a 3 years' agreement being signed.—Address, Cape, c/o Messrs. Evans, Lescher and Webb, 60, Bartholomew Close, London, E.C.

SOUTH AFRICA (healthy coast town).—At once, two qualified Assistants required, one for the Wholesale and the other for the Retail. Must be thoroughly reliable, competent, steady, and of sober habits; latter most essential. Scotchmen preferred; aged from 21 to 25; Minor qualification. For the Wholesale, the Assistant must have had previous experience. For the Retail, the Assistant must have had first-class Dispensing and Retail experience. Salary, 1st year, £13 10s. per month; 2nd year, £14 10s.; 3rd year, £15 10s.; without board and outdoor (sleeping accommodation provided, conditionally, for Retail Assistant). Second-class passage paid out, and allowance on board. Three years' agreement. — Address, South Africa, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

ASSISTANT; 26; high-class Dispensing experience.—H., 35, Bronson Rd., Merton.

LOCUM; Hospital work; disengaged; qualified.—Spring, Pharm. Journal Office, 8, Serle St.

TEMPORARY or otherwise; abstainer; good reference.—Pharmacist, 107a, Aslett St., S.W.

ASSISTANT; 35; best London and Provincial experience; disengaged.—Palmer, Henfield, Sussex.

DISENGAGED evenings and Sundays; good references.—Antipyrine, 74, High St., Camden Town.

LOCUM; Dispenser (lady); qualified; disengaged.—Bismal, Pharm. Journal Office, 8, Serle St., W.C.

COMPETENT Assistant; married; good experience; near London preferred.—Hughes, 9, Falmouth Rd., S.E.

QUALIFIED; 23; good Retail Dispensing and Photo. experience; Yorkshire preferred, but not essential.—Chemist, 4, College Grove, Wakefield.

PHARMACEUTICAL Chemist desires situation in first-class Retail business; 5 years with Mr. G. T. W. Newsholme.—T. T. Cocking, 19, St. Andrew's St., Cambridge.

LADY Dispenser, 22, qualified, experienced, desires re-engagement with Doctor or in Institution; simple book-keeping; references exchanged.—M., 40, London Rd., King's Lynn.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Platinum; disused utensils and scraps.—P. Rowsell, 9, Derwent Grove, Dulwich.

OFFERED.

1 lb. Phenacetin, 6s. 4d.; 2 lb. ditto, 12s.; cash with order.—Eastman, Chemist, Stratford.

Photographic Mounts.—500 assorted job slip-in mounts, 10s.—Edward Peck, East Dereham.

Dental Chair (Archer's); good condition; 7 guineas.—Dentalis, 7, Osborne Terrace, Landport.

150 Idris "B" 7% Preference, 23s. with dividend just due; 50 Lewis and Burrows 6% Preference, 17s.—M., 30, Tranquil Vale, Blackheath, S.E.

Bicycle.—26in. Eddystone Pneumatic; flat bar; 63 gear; in good condition; light Roadster; rubber pedals. What offers?—Smilax, Pharm. Journal Office, 8, Serle St., W.C.

Exchange.—Splendid Microscope; almost new; accessories; in mahogany case; cost £10; for good gent.'s bicycle (free wheel), or offer.—Town Dispensary, Burton-on-Trent.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

Croquet and Tennis.—Must sell splendid set of latest pattern club Croquet, consisting of 4 large boxwood mallets, 4 coloured boxwood balls, set thick narrow hoops, posts, markers, &c., in case; only 34s. 6d.; worth 58s.; new. Also splendid Tennis set, 52s. 6d.; or articles separately, as follows: Patent self-supporting standards, fitted with iron ground sockets, 15s. 6d.; waterproof net, bound top, 9s. 6d.; 4 superior 15s. racquets, 7s. 6d. each; and 12 splendid balls, 6s. 6d.; all new; approval before payment.—Mr. P. Ralph, Cambridge House, Lakenheath, Suffolk.

TERMS FOR ADVERTISEMENTS
IN THE
PHARMACEUTICAL JOURNAL

Advertisements of **Assistants Wanted, Apprenticeships, For Sale, Partnerships, Businesses for Disposal, Businesses Wanted, Premises to Let,** and **Agencies:**—Fifty words or less, 3s. 6d. Each additional ten words or less, 6d.

Advertisements of **Engagements Wanted**—Twelve words or less, 6d. Each additional twelve words or less, 6d.

Advertisements of a general character:—4s. 6d. each for 50 words or less; and each additional ten words, 6d.

Displayed Advertisements:—Whole Page, £5; Half Page, £2 10s.; Quarter Page, £1 5s.; Eighth Page, 12s. 6d. Reduced rates for a series of insertions on application.

The latest time for receiving Small Advertisements for the current week is Thursday, 4 p.m.; and for Displayed Advertisements, Thursday, 10 a.m.

Postal Orders should be made payable at Lincoln's Inn, W.C., to G. Street & Co., Ltd. Cheques crossed "London Joint Stock Bank."

All communications respecting advertisements should be addressed to the PUBLISHERS, 8, Serle Street, Lincoln's Inn, London, W.C.

Telegrams—"Pharmaceutical Journal," Serle Street, W.C.

READING COVERS Cloth, Gilt-lettered Covers, with strings, to hold twenty-six numbers of the "**Pharmaceutical Journal,**" may now be obtained. The charge, including postage, is **2/-** each, and should be remitted to

The PUBLISHERS, 8, SERLE STREET, LINCOLN'S INN, LONDON, W.C.

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows:—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

£300 ALL AT.—Unopposed light Retail Dispensing and Prescribing Business; old-established; South coast; well fitted; owner retiring; great scope for increase.—Hydrastis, Pharm. Journal Office, 8, Serle St., W.C.

BLACKPOOL.—Chemist and Photographic Stock and Fixtures, new last year, to be Disposed of, proprietor having Medical Army Appointment; the shop, which is in best part of Blackpool, South Shore, can be had; low rental, £20. —Crosher, 1, Kensington Buildings, South Shore, Blackpool.

GRATIS.—Modern Shop in London, S.E., fitted as Chemist's, cost £100, with small amount of stock; owner going abroad; rent £65 per annum, on lease, which may be terminated in 4 or 18 years by tenant; new estate being developed opposite. —Apply, Cinchona, Pharm. Journal Office, 8, Serle St., W.C.

ELABORATELY fitted Branch; perfectly stocked; main street near G.P.O.; Manchester suburb; fair valuation about £300, returns £450; illness and assistants the reason; splendid house, rent and taxes low; new colony of houses being built; large population; photo on application; lifetime chance; personally could double returns.—Bona-fide, Pharm. Journal Office, 8, Serle St., W.C.

Business Wanted

WANTED, a good Chemist's Retail and Dispensing Business, in the Midlands preferred; net profit about £300; must be good dwelling-house.—Particulars, returns, rent, etc., to Alpha, Pharm. Journal Office, 8, Serle St., W.C.

Tenders

WEST BROMWICH DISTRICT HOSPITAL.

Tenders for Supply of Drugs.

PERSONS desirous of contracting for the supply of the above from July 1st, 1902, to December 31st, 1902, are requested to apply to me for a Form of Tender (no other will be received).

It is requested that all Tenders will be delivered (sealed) at the Secretary's Office before 10 a.m. on Monday, 16th June, 1902, endorsed "Tender for Drugs."

All Drugs must be quoted for "carriage paid."

The Board of Management do not bind themselves to accept the lowest or any Tender, and reserve to themselves the right of deciding in case of dispute with regard to the quality of any Drug supplied.

By order of the Board,
Clement Keys,
Secretary and Collector.

Board Room,
29th May, 1902.

CHEMISTS WHO WISH

to make Up-to-date Improvements, Alterations, &c., would do well to consult

H. MILLS, Shopfitter, Shop Front Builder, &c.

Works: 63-165, OLD STREET, LONDON, E.C.

CHEAP HOUSE for Window Enclosures, Drug Fixtures, Wall Cases, Dispensing Screens, Glass Facias, Stall Plates, &c.

Chemists fitted complete. Estimates Free.

CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., Chemists' Transfer Agents, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

The Business conducted by Messrs. Orridge & Co., has been known as a Transfer Agency in the advertising columns of the Pharmaceutical Journal since the year 1846, and is well known to all the leading firms in the Trade.

VENDORS have the advantage of Messrs. O. and Co.'s direct attention and advice as to value without any additional fees.

PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

Terms for Valuation on application.

THOMAS TOMLINSON & SON

Chemists' Transfer Agents and Valuers,

9, NEW CANNON STREET, MANCHESTER.

VENDORS saved time and trouble by consulting before offering for sale PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address*, "Tomtom."

Messrs. BERDOE & CO.

Expert Stock-takers & Valuers

Stock-taking is a necessity, and we undertake the work at the smallest possible cost, and guarantee not to upset the routine of business in the slightest degree. Terms on application. Businesses sold, valued and investigated. Note the address:—

35, JEWRY STREET, FENCHURCH ST., CITY

Shop Fittings for Sale

10-FT mahogany plate-glass case, fronted; serving counter; mahogany desk and case, glass shelves, mirror back, carving on top; 12 ft. run of mahogany side fittings; mahogany fronted drug drawers, bevelled glass labels, cut glass knobs, lockers under, shelves above for bottles, carved trusses and spandrils, mahogany cornice on top; counter drawers, &c.; cheap for cash.—H. Govier (late of 22, Gun St., Bishopsgate), Medical Shop Fitter, 207, Ball's Pond Rd., London, N.

TERMS OF SUBSCRIPTION.

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NOTES IN PARLIAMENT.

The Patent Law.—There is a surplus of revenue to the Exchequer from fees on patents; last year it amounted to upwards of £107,000. Under the circumstances Sir J. Leng on Monday last asked the President of the Board of Trade whether it was contemplated to reduce the renewal fees so as to approximate the cost of a patent in the United Kingdom to that in the United States. Mr. G. Balfour answered that it is not at present in contemplation to reduce these fees. He added that if the Patent Law now before Parliament becomes law a considerable increase in the staff of the Patent Office must follow, and the work done—which should be of material benefit to inventors—will cause so large an expenditure of money as very greatly to reduce the present surplus.

Parcel Post with the United States.—In a written reply which Mr. Austen Chamberlain has made to Mr. Alfred Davies, he states that negotiations, having for their object the establishment of a Parcel Post between this country and the United States, have for some time been in progress. No statement as to the final result could yet be made.

Fertilisers and Feeding Stuffs.—On Tuesday last in the House of Commons, Mr. Channing presented a Bill to amend the Fertilisers and Feeding Stuffs Act, 1893, and for other purposes relating thereto. The Bill was read a first time.

Food and Drugs Acts.—A Bill to amend the Sale of Food and Drugs Acts, 1875 to 1899, with respect to the sale of butterine, was on Tuesday presented in the House of Commons by Mr. Hanbury, and read a first time.

The Supply of Duty-Free Alcohol.—The question of relieving from duty alcohol used in manufacture came before the House of Commons on Wednesday last in the course of the discussion of the Finance Bill in Committee.—Mr. Haldane, who explained that he was acting in this matter at the instance of the Explosives Committee, moved the following new clause:—(1) Where, in the case of any art or manufacture carried on by any person in which the use of spirits is required, it shall be proved to the satisfaction of the Commissioners of Inland Revenue that the use of methylated spirits is unsuitable or detrimental, they may, if they think fit, authorise that person to receive spirits without payment of duty for use in the art or manufacture upon giving security to their satisfaction that he will use the spirits in the art or manufacture, and for no other purpose, and the spirits so used shall be exempt from duty. (2) The authority shall only be granted subject to a compliance with such regulations as the Commissioners may require the applicant to observe for the security of the revenue, and upon condition that he will, to the satisfaction of the Commissioners, if so required by them, render the spirits unpotable before and during use, and will from time to time pay any expenses that may be incurred in placing an officer in charge of his premises. (3) If any person so authorised shall not comply with any regulation which he is required to observe, he shall, in addition to any other fine or liability, incur a fine of fifty pounds. The hon. member observed that alcohol was a very powerful solvent of certain substances, and had the valuable property that though it disintegrated the substances to which it was applied it entered into no combination, but left the substances in the condition in which they were wanted.

The Uses of Alcohol, said Mr. Haldane, had been especially brought under the notice of the Explosives Committee owing to their inquiries as to nitro cellulose, but they found that one effect of the present law was not only to hinder the manufacture of that article in this country, but to seriously injure six or seven great industries in the country. He referred to the way in which German competition in products like knife handles, billiard balls, combs, and the various articles made from celluloid had been promoted to our disadvantage, and after incidentally claiming that the proposed clause had been drafted in a way which would benefit the chemical industry generally, he alluded to the preparation of colours from coal-tar, and to the important part which the use of alcohol plays in the process. This industry had, he said, largely shifted to Germany, owing to the superior facilities which Germans had for using alcohol. The making of aniline dyes was a British discovery, yet we were now compelled to import nearly 80 per cent. of our aniline dyes from Germany. He next glanced at the use of alcohol in the preparation of scents and perfumes; and of drugs like antipyrine. Many of these valuable commodities were scarcely produced in this country owing to the difficulties which the existing Revenue law put in the way. One German firm was known to have made £60,000 out of antipyrine alone, and much of what they made came here. Our chief chemists were hampered to an extent not generally realised. There was a strong case for relaxation of the existing law, and if that relaxation could be made under such stringent conditions as would safeguard the people from the temptations of drink—as he thought would be the case under the clause—the advantage of the change proposed would be enormous.

In the Course of the Discussion which followed Mr. Cochrane urged that this was a case in which a relatively small concession might be of great public benefit in promoting research and helping industry. He especially instanced fulminate of mercury as an article in the preparation of which the Germans had the advantage over us owing to the state of the law.—Mr. Cawley, speaking with special reference to the preparation of aniline dyes, expressed the belief that even more than 80 per cent. were now imported. If, however, the manufacturers could have free alcohol they would be able to compete with the foreigner.—Colonel Sadler also bore testimony to the fact that the present state of the law had a remarkable effect in restricting the making of aniline dyes. Many industries would be benefited if alcohol could be used as now proposed. It was the best solvent for certain specific purposes of which we had knowledge. He also alluded to its use as a motor power. It was largely used in that way on the Continent, and had the advantage that the flash point was very much safer than that of spirits of the character generally used for motive power.—Mr. Fletcher Moulton suggested that the Chancellor of the Exchequer, when he freed important manufactures, as now proposed, should do the work thoroughly and, while removing the hindrances in the use of alcohol, would no longer penalise things made from alcohol, and would remove the duty from other valuable agents used in manufacture. He pointed out how chemistry had become infinitely more complex than it was when the present law was instituted, and suggested that as things stood the chemical manufacturer had, as it were, to fight with one hand tied behind his back when he had to compete with his foreign rivals. Reference had been made to the coal-tar dyes. Out of such unwholesome looking stuff as coal-tar we had not only obtained certain drugs of great value, but—such was the pitch of knowledge—that we could prophesy the existence of drugs by special qualities which were to be obtained in a particular way from these coal-tar products. Sulphonal was actually prophesied; it was discovered only after it had been pointed out that the physiological knowledge of the world indicated that by means of a combination of a particular kind we would find a drug which would have the power which sulphonal was found to have. So it was that with other drugs to be taken internally this coal chemistry had assumed a position of prime importance. By putting this heavy tax on pure alcohol we had made it impossible for the English manufacturer to manufacture pure drugs. But he wished to observe that sulphuric ether was an agent which in the hands of the skilful chemist had uses almost as numerous as those of alcohol, and manufacturers should have the facilities for using all necessary agents at cost price, which manufacturers of other nations possessed. It was for this reason that he said that, while freeing alcohol, they should no longer penalise things made from alcohol.

The Chancellor of the Exchequer said that he felt very much the responsibility of his position in this matter. Nothing could be worse to his mind than that the Chancellor of the Exchequer of to-day should, with the idea of favouring or improving trade in this country, give a loop-hole to the use of alcohol in such a way as to increase drunkenness. However, he had carefully considered the probable effect of the clause, and he had come to the conclusion that it was a clause to which he could properly agree. He did not wish now to enter into the further subject raised by Mr. Moulton, but he would make inquiry. They might be able to consider it before long—though he could not promise as to this session. In matters connected with chemistry or science generally it was proper to consider the existence of hindrances which arose from causes not anticipated when the law was framed.—Mr. W. S. Caine hoped that every care would be taken against the clause being abused and drunkenness being promoted.—Mr. T. P. O'Connor said that some of the best motor-cars in France were driven with alcohol, which was also much used as an illuminant.—Mr. Norman said that spiritine, which was largely used in Germany, could not be successfully used in this country because of the restrictions which existed.—Mr. Moulton, in reference to Mr. Caine's remarks, explained how the alcohol used in manufacture was rendered unpotable, and Mr. Haldane having added a few remarks to the like effect, the clause was read a second time and added to the Bill.

THE SUGAR DUTY.—In the course of the discussion on the Finance Bill on Wednesday the Chancellor of the Exchequer, on an amendment moved by Mr. Channing and afterwards negatived, said that sugar was a very fluctuating article, but the tendency of recent years had been for the price to fall. He thought it probable that the price will continue relatively low for some time to come. He suggested that one effect of the Brussels Convention when it comes into operation next year will be to steady the price, though he does not think that it will increase it. With respect to glucose it had been stated in the debate that one effect of the present fiscal arrangements is to cause as large a proportion of glucose as sugar to be used in the manufacture of jam, and thus cause loss to the revenue. He intimated that this matter will be carefully examined into.

SCHOOL AND COLLEGE NEWS.

EXETER PHARMACY SCHOOL.—At a meeting of the governors of the Royal Albert Memorial, Exeter, on Monday, June 9, a recommendation by the College Committee that the principal should consult the chemists of Exeter, and report upon the desirability of continuing the class in pharmacy, was adopted.

THE PROPOSED LIVERPOOL UNIVERSITY.—At an extraordinary meeting of proprietors of the Liverpool Royal Institution, on Tuesday, June 10, the President (Mr. Cestevens) moved the following resolution:—"That the proprietors of the Liverpool Royal Institution, having watched with much interest and sympathy the establishment and growth of University College, and being of opinion that the incorporation of a University of Liverpool would tend to the advancement of higher education and culture in association with the civic life of the city, desire that a petition by the institution be presented to the King in Council in support of the petition presented by University College for a charter of incorporation, and that accordingly the seal of the institution be affixed to a petition." Dr. Caton seconded the motion, which was adopted unanimously.

NORTHERN COLLEGE OF PHARMACY.—On Thursday, June 5, the principals and students assembled for the purpose of presenting Mr. Frederick Lawson, B.Sc., with a case of cutlery and plate on the occasion of his approaching marriage. The chair was taken by Mr. Sharp, who, in the course of a few introductory remarks, said he was pleased to have the opportunity of expressing his appreciation of the untiring energy and painstaking care which Mr. Lawson gave to students under his tuition. He then called upon Mr. Sixsmith to make the presentation. Before doing so Mr. Sixsmith said the subscriptions had been given most readily, and past students who had sent subscriptions all acknowledged the debt they owed to Mr. Lawson for his never-failing assistance in their studies. He (Mr. Sixsmith) was very happy to make the presentation on behalf of the students, because it showed the kindly feeling that existed between them and their tutor. Mr. Lawson, in accepting the present, said he had no idea that anything of the sort was contemplated, and he was very much obliged to the students, and thanked them heartily for their handsome gift. Subsequently a vote of thanks was accorded to Messrs. Sharp and Sixsmith, who had been instrumental in collecting subscriptions and purchasing the present, and the students were granted a half-holiday to celebrate the occasion.

SCHOOL OF PHARMACY.—On Saturday, June 7, the members of the Students' Association went on a botanical excursion, the scene of operations being the district roundabout Caterham and Godstone. The party on meeting at Charing Cross found a reserved carriage awaiting them, and leaving the station at 9.24 a.m., an hour's run brought them to Caterham Valley. About 11 o'clock a move was made in the direction of the woods, and then the work of making "finds" began in earnest. At mid-day a halt was called for lunch, and before this was over rain began to fall, so that a re-start was delayed. On the weather clearing, however, the different sections of the party, headed respectively by Mr. W. H. Lenton, H. Deane, and R. R. Bennett, again got under way, and resumed their quest. Upwards of ninety different plants were found in flower in the woods and fields, and by the hedge-side, amongst the specimens collected being some very nice ones of *Fumaria officinalis, Helianthemum vulgare, Polygala vulgaris, Euonymus europæus, Conium maculatum, Asperula odorata, Symphytum officinale, Atropa belladonna, Rhinanthus crista-galli, Daphne laureola, Bryonia dioica, Orchis mascula, Listera ovata, Epipactis grandiflora, Ophrys muscifera, Habenaria bifolia, Tamus communis, Paris quadrifolia* and *Luzula campestris.* Upon reaching Godstone the company sat down to tea in Ye Claytone Hotel, which fine old hostelry must have quite a long and stirring history of its own, seeing that it was founded in 1388. After tea votes of thanks were passed to Messrs. Lenton, Deane, and Bennett for their invaluable help during the day, and also to the hon. secs. of the Students' Association for arranging the expedition. After a walk back to Caterham Station, the party entrained for London Bridge, and judging by the vocal performance in the train on the homeward journey, the spirits of the "Square" men were in no wise depressed by the somewhat adverse weather conditions which had prevailed during the day, indeed, all seemed to have thoroughly enjoyed the outing, which had combined instruction and healthful recreation.

SOCIETY AND ASSOCIATION NEWS.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN (NORTH BRITISH BRANCH).—A meeting of the members of the Society residing in Scotland will be held in the Society's House, 36, York Place, Edinburgh, on Friday, June 20, 1902, at eleven a.m. precisely. Business: (1) Chairman's statement; (2) Scrutineers' report; (3) Election of Executive.

FORFARSHIRE AND DISTRICT CHEMISTS' ASSOCIATION.—The annual meeting will be held in Lamb's Hotel, Dundee, on Wednesday, June 18, at 4 o'clock. Members are requested to bring lady friends, so that a committee of them may be formed to assist in Conference arrangements. After formal business, the draft programme for the Conference will be submitted. Afternoon tea will be served at 4.15.

PHARMACEUTICAL SOCIETY OF IRELAND.—All applications for the undermentioned July examinations must be lodged with the Registrar by eleven o'clock, a.m., on the following dates:—

For Preliminary Examination, by Tuesday morning, 17th inst.
„ Registered Druggist „ „ „ „ 24th „
„ Pharm. Licence „ „ Wednesday „ 25th „
„ Pharm. Assistant „ „ Monday „ 30th „

LONDON CHEMISTS' ASSOCIATION.—The first annual general meeting of members of this Association will be held on Wednesday, June 18, at the Holborn Viaduct Hotel, at 3 p.m., to receive the report of the General Purposes Committee, and to elect a Committee for the ensuing year. Mr. F. E. Bustard has given notice that he will submit the following resolution to the meeting:—"That this Association urges upon the Council of the Pharmaceutical Society the advisability of bringing a test case before the Courts of Law at an early date for the purpose of deciding finally the right or otherwise of limited liability companies to use the title of 'chemists.'"

BIRTH.

JONES.—On the 6th inst., at the Medical Hall, Penmaenmawr, the wife of W. Parry Jones, of a daughter.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. A. C. Wootton, who has had a serious attack of pneumonia, is now reported to be improving.

Mr. S. J. Hurst, chemist and druggist, Market Place, Boston, has opened a branch business at 40, Skirbeck Road, Mount Bridge, Boston.

Mr. A. C. J. Horrell, pharmaceutical chemist, Broadstairs, Chairman of the local Urban District Council, took the oath at Ramsgate on June 10 as an *ex-officio* Justice of the Peace for the county.

Mr. J. Painter, chemist and druggist, Malmesbury, has written a new National Anthem, of which a copy has been sent to the King. His Majesty has been graciously pleased to express his thanks.

Mr. S. Sturton, chemist, Goldhawk Road, Shepherd's Bush, W., has met with a serious accident while riding a bicycle, and sustained severe concussion of the brain, but it is satisfactory to learn that he is now progressing favourably.

Messrs. Arthur H. Cox and Co., Brighton, announce that although their establishment will be closed on Coronation Day and on June 27, they have made arrangements that all telegrams and other important orders will receive immediate attention on either day.

Mr. Herbert Knapman, B.A., of Emmanuel College, Cambridge, has passed in the First Class, First Division, of Part II. of the Mathematical Tripos—that is to say, with the highest distinction possible. Mr. Knapman, who is the son of Mr. J. W. Knapman, Librarian to the Pharmaceutical Society of Great Britain, was Second Wrangler in Part I. of the Tripos last year.

Professor J. R. Remington is now Chairman of the Committee of Revision of the U.S. Pharmacopœia, having been appointed to that position since the death of the late Charles Rice. Professor Remington was succeeded as first Vice-Chairman by Mr. C. L. Diehl, and Dr. H. H. Rusby was appointed a new member of the Committee. The new U.S. Pharmacopœia will probably be published some time next year.

Mr. J. T. Davy, chemist and druggist, Irthlingborough, on Friday night, June 6, discovered a fire among some chemicals in a cupboard at the back of the shop. The fire was apparently extinguished, and the family retired to bed, but a few hours later the fire broke out again in the servants' bedroom over the shop, the matchboarding having smouldered. Considerable damage was done before the fire was eventually put out.

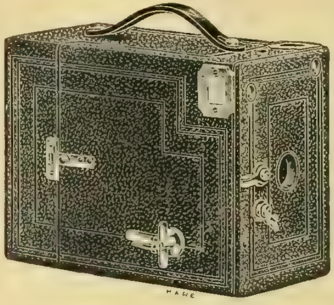
Mr. William Harrison, chemist and druggist, of Clitheroe, whose death is announced this week, was born at Skipton in 1837, and went to Clitheroe about the year 1852 as apprentice to his uncle, Mr. Robert Hargreaves, whose business he afterwards took over. Both Mr. Harrison and his wife had been ill for some time; Mrs. Harrison died on Monday night, June 2, and Mr. Harrison on Thursday morning, June 5.

Mr. W. F. Martin, a former prizeman of the Edinburgh Chemists', Assistants', and Apprentices' Association, who is now a member of the manufacturing staff of Messrs. T. and H. Smith and Co., Edinburgh, has taken two medals—one for elementary electric engineering and the other for elementary magnetism and electricity—at the Heriot-Watt College. Mr. W. C. Winton, who has taken the medal and a prize of £2 2s. for advanced organic chemistry, and Mr. Robert Kego, who has won the medal for advanced inorganic chemistry, are also employed by Messrs. T. and H. Smith and Co.

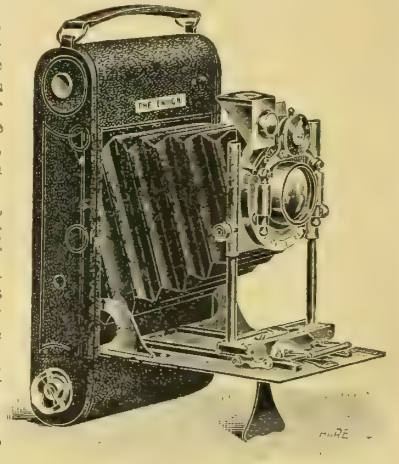
TRADE NOTES AND NOVELTIES.

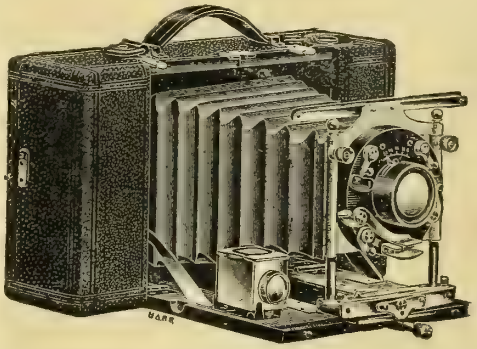
Messrs. Tunbridge and Wright, of Reading, have opened a London depôt at 12, Little Britain, Aldersgate Street, E.C., for the sale of their well-known proprietary articles, which include Dr. Mackenzie's "Catarrh Cure," "Fly Cemetery," etc., etc.

New Roll Film Hand Cameras.—Owing to the decision of a certain well-known photographic firm to, in future, deal direct with the retailer only, and to practically boycott the wholesale dealer, Messrs. Geo. Houghton and Son, 88 and 89, High Holborn, W.C., announced their intention of placing upon the market a variety of daylight-loading roll film hand cameras, and some weeks ago we noticed the first of these, viz., the "No. 1 Scout," to retail at 5s., and the "Ensign," to retail at 72s. 6d. Messrs. Houghton and Son now direct attention to three further introductions—the "No. 2 Scout," the Ensign Model "B," and the Ensign Model "C." The first-mentioned is on the lines of the "No. 1 Scout," but takes a picture 3¼ by 2¼, and is fitted with two finders and three stops. Either six or twelve exposure films can be used in this camera, and, despite its price (10s.), it is a thoroughly efficient instrument, capable of producing excellent little pictures. The Ensign Model "B" is similar in appearance to the Model "A" Ensign, but, as will be seen in the illustration, has the important advantage of a rising and folding front for both horizontal and vertical pictures. This makes it essentially the camera for use with high-class lenses; hence it is supplied with Goerz, Cooke's, Dallmeyer stigmatic, Beck Steinheil, and other lenses, at prices ranging from £5 to £10 3s. A plate adapter can also be supplied, thus enabling the owner to use glass plates whenever desired. The "Ensign" Model "C" is another form of folding camera taking pictures on films 5 by 4 size, or on plates 4¼ by 3¼. The camera is fitted with rising front, R.R. lens, rack and pinion, brilliant finder, and shutter working between the lenses, and is sold at £5 5s. Messrs. Houghton and Son will be pleased to forward further particulars to any chemist who applies, mentioning the *P.J.*



"The No. 2 Scout."





MARKET REPORT.

London, Thursday, June 12, 1902.

Business in Drugs and Chemicals continues deplorably dull, and it looks as if there can hardly be any real improvement until the autumn, when it is to be sincerely hoped that a different state of things will prevail. So far, the advent of the long-hoped-for Peace in South Africa appears to have had little or no effect in the direction of an improvement in trade. It may be, however, that we may see rather more activity after the Coronation Festivities. The weather also appears to be exercising an adverse influence, and the cry is, Shall we get any summer at all? and if not, what then? There are no changes of any importance to record, with the exception that the speculative market for Quinine appears to be going from bad to worse, while Codliver Oil, on the other hand, is still further up in the clouds, it being reported that the fishings are practically over, and that the results are as a total extremely unfavourable. Agents for the refiners on the other side are either quoting prohibitive prices, or else decline to offer; price varies from 135s. to 145s. per barrel f.o.b. for Norwegian, while Newfoundland Oil is only available in limited quantity at 5s. per gallon. At above figures buyers will naturally only buy for absolute immediate requirements, bearing in mind that for the present the consuming season is practically over, and that they can hardly lose much by waiting.

THURSDAY'S DRUG SALES.

To-day's Drug Auctions comprised 17 catalogues, some of which were somewhat lengthy; the sale passed off, however, very quietly, many of the lots failing to sell. There were no changes in value of any special importance to record. We give particulars below:—

ACID TANNIC.—5 cases, each 16 × 7-lb. parcels, of Dr. Byk's pure leviss quality were taken out nominally at 2s. per lb.

ALOES.—22 boxes, each about 100 lb., sold without reserve at 14s. to 26s. per cwt. 1 case Cape was taken out at 42s. per cwt. Other 18 cases sold at 37s. 6d. to 44s. 6d. per cwt. 6 boxes Curaçoa sold at 19s. per cwt. Other 37 boxes all sold at 23s. to 24s. per cwt. for fair livery. 27 kegs Soccotrine part sold at 72s. 6d. per cwt. Other 9 cases part sold at same figure. 78 cases East African did not sell.

AMBERGRIS.—Of 3 tins 1 tin of good quality was taken out at 100s. per oz. Other two at 25s. and 30s. per oz.

ARECA NUTS.—32 bags of fair quality were taken out at 18s. per cwt.

ARGOL.—3 bags Cape sold at 35s. per cwt.

BALSAM COPAIBAE.—10 cases were taken out at 1s. 8d. per lb. Other 3 casks at 2s. 3d.

BALSAM TOLU.—17 cases were taken out at 1s. 6d. per lb.

BUCHU LEAVES.—9 bales fair green rounds did not sell.

CALUMBA ROOT.— 100 bags all sold chiefly at 9s. per cwt. for sorts. Other 218 packages at 7s. to 8s. per cwt.

CANELLA ALBA.—25 bales were bought in at 50s. per cwt.

CARDAMOMS.—48 cases Ceylon part sold at 1s. 10d. per lb. for fairly bold of good pale colour. 4 cases Malabars, offered without reserve, only realised 1s. 3d. per lb. Other 13 cases sold at 2s. 7d. per lb. for fine bold bleached Ceylon, and at 2s. 2d. per lb. for not quite so bold, but of paler colour. Other 43 cases sold at 2s. 10d. per lb. for good bold downwards, other 70 cases at 3s. per lb. downwards, seed realising 1s. 9d. per lb. 31 packages Mangalores sold at 2s. 4d. per lb. downwards.

CASCARA SAGRADA.—30 bags of last year's import were taken out at 22s. 6d. per cwt.

CASCARILLA BARK.—28 bales were bought in at 45s. per cwt.

CASSIA FISTULA.—14 bags good pods sold at 27s. per cwt.

CHALMOOGRA OIL.—2 cases, each 2 × 39 lb. tins, were bought in.

CHIRETTA.—48 bales were all bought in at 2d. per lb. for fair and 1½d. per lb. for dark.

CINCHONA BARK.—269 serons all sold at 6¼d. to 1s. per lb.

COCA LEAVES.—1 case Ceylon sold at 1s. per lb.

COCCULUS INDICUS.—3 bags sold at 5s. per cwt. Other 100 bags of fair quality were taken out at 9s. per cwt.

COLOCYNTH.—4 cases Turkish, consisting of fair bold apple, part broken, were taken out at 1s. 8d. per lb. 2 cases Spanish sold at 1s. per lb.

CROTON SEEDS.—46 bags fair mixed were bought in at 30s. per cwt.

CUMMIN SEEDS.—30 bags good Malta were taken out at 34s. per cwt.

CUTTLE FISH.—10 mats fair bold taken out at 3½d. per lb.

DILL SEED.—20 bags sold at 8s. 6d. per cwt.

DIVI DIVI.—42 bags bought in at £12 per ton.

DRAGON'S BLOOD.—6 packages poor Zanzibar Drop were taken out at 50s. per cwt. Of other 3 cases of rather common stuff 2 cases sold at £9 and £10 10s. per cwt. Other 7 cases bought in at £15 per cwt. for fine, bright, reboiled lump, and at £9 10s. for reeds.

ERGOT OF RYE.—10 bags fair Spanish failed to find a buyer.

FENNEL SEED.—50 bags part sold at 18s. per cwt.

GAMBOGE.—7 cases were bought in at £12 10s. per cwt. for good pickings, and at £14 10s. for fair bright.

GUM AMMONIACUM.—10 cases part sold at 22s. per cwt. for grain; pea and bean size bought in at 40s. Other 11 cases inferior partly-blocky sold without reserve at 5s. to 10s. per per cwt.

GUM ARABIC.—17 bales Aden gum were taken out at 35s. per cwt.

GUM BENZOIN.—48 cases Sumatra part sold at £6 5s. to £7 15s. per cwt., according to quality. Other 100 cases part sold at £6 12s. 6d. to £7 2s. 6d. 20 cases Palembang realised 37s. 6d. per cwt. Of 27 cases Siam only 2 cases sold at £6 15s. and 6 cases of very low quality at 62s. 6d. per cwt.

GUM ELEMI.—4 cases dark in colour were bought in at 50s. per cwt. Other 20 cases at 85s. Other 2 cases good white sold at 70s. to 71s. per cwt.

GUM KINO.—5 cases rather blocky were taken out at 1s. per lb. Other 4 cases of good quality sold without reserve at 6d. to 6¼d. per lb.

GUM MYRRH.—2 cases picked gum, but of rather poor quality, were taken out at £5 10s. per cwt. Other 29 packages also did not sell.

INSECT FLOWERS.—4 bales, of which no sample was available, were taken out at 95s. per cwt.

IPECACUANHA.—20 bales Rio were taken out at 9s. 8d. to 9s. 10d. per lb., other 8 barrels at 10s. per lb. Of other 27 bales only 4 bales sold at 8s. 8d. to 8s. 9d. per lb. for SD. 13 packages Carthagena were bought in at 4s. 3d. per lb., other 7 bales at 4s. 4d., other 12 packages at 4s. 3d. per lb.

KOLA NUTS.—1 barrel washed sold without reserve at 3d. per lb.

LIME JUICE.—5 barrels were taken out at 1s. per gallon.

MENTHOL.—4 cases Kobayashi did not sell.

NUX VOMICA.—110 bags good Cochin were bought in at 10s. per cwt.

ORANGE PEEL.—26 packages were taken out at 4d. to 6d. per lb. for medium to fair thin cut.

ORCHELLA WEED.—3 bales sold at 12s. per cwt.

ORRIS ROOT.—10 bags darkish in colour sold at 19s. 6d. per cwt.

QUINCE SEED.—6 bags fair Cape sold at 1s. per lb.

RHUBARB.—Of 39 cases only 2 cases flat high dried sold at 9d. per lb. Good round Shensi was bought in at 3s. 6d. per lb.; flat at 3s. 3d. to 3s. 6d. Of other 30 cases only 2 cases sold at 1s. per lb.

SARSAPARILLA.—19 bales Jamaica part sold at 1s. 3d. to 1s. 4d. per lb. for the sound and at 1s. 1d. per lb. for SD. Other 16 bales sold at 1s. 3d. per lb. for ICCD downwards, according to condition. Other 15 bales all SD sold at 11½d. to 1s. per lb., subject to owner's approval.

SENNA.—56 bales Tinnivelly practically all sold at 1½d. per lb. downwards (quality and conditions being by no means desirable). Pods realised 2¼d. downwards. Other 42 bales sold at 4½d. per lb. downwards. 37 bales Alexandrian were taken out at 6d. per lb. for good broken leaf and at 8d. per lb. for good pods.

TAMARINDS.—6 barrels fair syrupy West Indian were taken out at 11s. per cwt. Other 15 barrels ditto part sold at 12s. 6d. per cwt.

THYME SEED.—17 bags Bombay did not sell.

TURMERIC.—33 bags fair Bombay were taken out at 15s. per cwt. 26 bags ditto offered without reserve realised 11s. 6d. to 12s. 6d. per cwt. 65 bags Madras sold without reserve at 12s. to 12s. 3d. per cwt.

VANILLOES.—14 cases Tahiti were bought in.

VERMILLION.—4 cases China were bought in at 3s. 2d. per lb.

DIARY OF THE WEEK.

Tuesday, June 17.

JACOB BELL AND MANCHESTER SCHOLARSHIPS COMPETITION at London, Edinburgh, and Manchester.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, London, W.C.—Library, etc., Committee.

Wednesday, June 18.

CHEMICAL SOCIETY, Burlington House, Piccadilly, W., at 5.30 p.m.—"Elimination of a Nitro-group on Diazotisation. Dinitro-*p*-anisidine," by R. Meldola and J. V. Eyre; "A New Type of Substituted Nitrogen Chlorides," by F. D. Chattaway; "The Colour-changes Exhibited by the Chlorides of Cobalt and some other Metals, from the Standpoint of the Theory of Electro-affinity," by F. G. Donnan and H. Bassett, jun.; "An Accurate Method of Determining the Compressibility of Vapours," by B.D. Steele; "The Molecular Condition of Borax in Solution," by H.S. Shelton; "Preliminary Notice of some new Derivatives of Pinene and other Terpenes," by W. A. Tilden and H. Burrows; "The Preparation of Pure Chlorine and its Behaviour towards Hydrogen," by J. W. Mellor and E. J. Russell.

FORFARSHIRE AND DISTRICT CHEMISTS ASSOCIATION, Lamb's Hotel, Dundee, at 4 p.m.—Annual Meeting.

LONDON CHEMISTS' ASSOCIATION, Holborn Viaduct Hotel, London, E.C., at 3 p.m.—Annual Meeting.

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover Square, London, W., at 8 p.m.—"The Genus Synchæta: A Monographic Study, with descriptions of five new species," by C. F. Rousselet.

Thursday, June 19.

LINNEAN SOCIETY, Burlington House, Piccadilly, W., at 8 p.m.—Dr. W. G. Ridewood, on "Obesiella, a New Genus of Copepoda"; G. Massee, on "Modern Methods in Mycology"; W. P. Pycraft, on "Further Observations on the Owls, especially their Skeleton.

Friday, June 20.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN (N.B. Branch), 36, York Place, Edinburgh, at 11 a.m.—Meeting of members residing in Scotland.

PHARMACY ACT CASE.

At Kingston-on-Thames, on Thursday, June 12, Joseph Hutchinson, corn and seed merchant, of Cobham (Surrey), was charged on three summonses, under Section 17 of the Pharmacy Act, 1868, for selling "XL-all Vaporising Fumigator" containing nicotine, not in accordance with the provisions of the Act—(1) for selling a poison not labelled with the name and address of the seller, (2) for selling to a person unknown and without being introduced by a person known to the seller, (3) for not making the requisite entries in a poison book. Mr. Vaughan Williams appeared for the Pharmaceutical Society, and Mr. T. G. Dobbs for the defendant. After a lengthy hearing, the magistrates found the offences proved, and fined defendant £2 on each of the three summonses.

COMPANY INTELLIGENCE.

A. J. WHITE, LTD.—The report of the directors for the year ended March 31, to be presented at the general meeting to be held on June 17, states that the company's business continues prosperous, the net profits for the year amounting to £63,364. After paying the preference dividend and adding £2,702 brought forward, there remains a balance of £36,066. A dividend of 5 per cent. upon the ordinary shares is proposed, leaving £11,066 to be carried forward.

MARRIAGES.

DOBSON—CLARKE.—At Mather's Hotel, Dundee, on June 4, by the Rev. Robert Lorimer, M.A., Mains U.F. Church. assisted by Rev. Charles Richardson, M.A., Glasgow, John Dobson, chemist, Stranraer, to Kate, second daughter of J. Powrie Clarke, Bridgefoot, by Dundee.

KELF—DAVIES.—On June 9, 1902, at St. John's, Westminster, by the Venerable Archdeacon Wilberforce, D.D., Rector, Henry D. Kelf, Ph.C., M.P.S., of East Dulwich, to Clara L. Davies, late of Christchurch, N.Z.

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The "Sanitas" Co., Lim.

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Full Catalogue and "How to Disinfect" Book will be sent free on application to—

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147, Houndsditch, London, E.C.

PUBLICATIONS RECEIVED.

GRIFFIN'S CHEMICAL HANDICRAFT: An illustrated and priced catalogue of chemical apparatus and reagents. Pp. 446. Price 3s., post free. London: John J. Griffin and Sons, Limited, 20-26, Sardinia Street, Lincoln's Inn Fields, W.C. 1902. From the Publishers.

HOW TO MAKE FERROTYPES AND GLASS POSITIVES. A concise and complete guide to the whole process. By "An Old Expert." Pp. 40. Post 6d., post free. London: J. Fallowfield, 146, Charing Cross Road, W. 1902. From the Publisher.

LONDON GAZETTE NOTICES.

PARTNERSHIP DISSOLVED.

Doland Dunn Smith and Frank Jeffree, surgeons, apothecaries, and general medical practitioners, Maitland House, Lower Clapton.

RECEIVING ORDERS IN BANKRUPTCY.

Laura Verrall Crossley, carrying on business as Blanche Leigh, soap and perfumery manufacturer, 126, Oxford Street London, Middlesex.

Joseph Dean, trading as Joseph Dean and Son, Mineral Water Manufacturer, 75, Mill Lane, Macclesfield.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Bagshaw, Baxter, Bott, Boyce, Buhrer, Carpenter, Clarke, Cruickshank, Cummings, Dallinger, Dallow, Davies, Dobson, Ferrall, Forbes, Goble, Hebb, Hewlett, Houghton, Kelf, Lee, Lucas, Merck, Newsholme, Parker, Purvis, Row, Smith, Wild, Williams.

Pharmaceutical Journal

SATURDAY, JUNE 21, 1902.

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NOTICE TO ADVERTISERS

In consequence of the **CORONATION** the *Pharmaceutical Journal* of June 28 will close for press a day earlier than usual.

Advertisements for the Inset must reach the Publishing Office, 8, Serle St. London, W.C., not later than 4 p.m. WEDNESDAY NEXT, the 25th instant.

June 19, 1902.

Assistants Wanted

Prepaid Advertisements under this heading are charged as follows:—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

A QUALIFIED, capable, and experienced Dispensing ASSISTANT wanted (outdoor).—Apply to WALLAS & Co., 9, Great Marylebone St., Wimpole St., London, W.

JUNIOR ASSISTANT wanted (indoors), by first week in July; light Retail and Dispensing.—State age, height, salary required, giving references, WOODWARD, Harwich, Essex.

BALKWILL & CO. have a vacancy for a Junior ASSISTANT; outdoor; one used to first-class Retail and Dispensing. —Apply, giving full particulars, to 106, Old Town St., Plymouth.

LONDON, S.W.—Wanted, a thoroughly competent ASSISTANT for the Dispensing counter; indoors.—State full particulars to A. J. PHILLIPS, 156, Cromwell Rd., South Kensington, S.W.

BIRMINGHAM.—ASSISTANT wanted (indoors) for good Retail and Dispensing business; age about 25.—Apply, with full particulars, to T. W. CHAPMAN, Chemist, 199, Bristol St., Birmingham.

LONDON, N.—JUNIOR, indoors, with time for study (2 to 5 p.m.), except Saturdays.—State age, height, salary and experience, with photo (returned), to CLAYTON, 74, Mountgrove Rd., Highbury.

QUALIFIED ASSISTANT for good Retail and Dispensing business; must possess good references and be a neat and accurate Dispenser.—Apply, E. H. CHURCH, 18, St. Andrew's St., Cambridge.

Assistants Wanted—Continued

WANTED, an ASSISTANT (indoors), for good class Dispensing and light Retail business; must be neat and accurate.—Please send photo with usual particulars to POOLEY & Co., 15, Hill Rd., Wimbledon.

MANAGER wanted; qualified essential; married; Extractor; for light country Retail; house and gas free. —State age, height, salary required, with photo and references, to BRICE, Chemist, Leicester.

WANTED, for the Autumn, two qualified ASSISTANTS for San Remo.—Apply by letter only, without photograph, to F. R. SQUIRE, 17, Bloomsbury Sq. Applications not answered in a reasonable time declined.

CAPABLE, qualified ASSISTANT (married) required to manage Branch.—State full particulars as to experience, age, height, references, salary required, and enclose photo, to ANDERSON & VIRGO, Chemists, Worcester.

WANTED, a thoroughly competent DISPENSER for the Royal Victoria Hospital, Dover, to live outdoors; a large out-patient department.—Write, with testimonials and stating salary required, to A. B. ELWIN, Esq., Hon. Sec., 2, Castle St., Dover.

LONDON, S.W., near Schools. — Indoor ASSISTANT, accustomed to good-class trade; two evenings off weekly and one hour daily; two kept; salary £40.—Send photo and all particulars, or call.—F. GLEW, Chemist and Radiographer, 156, Clapham Rd.

Continued on next page.

Assistants Wanted—Continued

NATAL.—Qualified Assistant wanted for principal town; good opening for smart man; salary, £16, £18 and £20 per month (outdoor); three years' agreement to be signed; second-class passage advanced.—Apply, C. W. S., c/o Pharm. Journal, 8, Serle St., London, W.C

HARROGATE. — Required, end of July, an experienced Junior Assistant (outdoor), of good appearance and address; must be a neat and accurate Dispenser.—Apply, giving references, stating height, age, and salary required, and enclosing photo (to be returned), to R. Hayton Davis, Pharmacist, High Harrogate.

IN a high-class Dispensing business, a qualified Junior of gentlemanly appearance and good address, well up in both Retail and Dispensing; three qualified assistants and two apprentices kept; weekly half-holiday. Applications not answered in three days declined. Preference given to one seeking a permanency.—F. Ross Sergeant, Nottingham.

CAPE TOWN.—Qualified Assistant wanted for good-class Chemist's business; young man; smart, quick, and accurate Dispenser; salary £14, £15 10s. and £17 per month for first, second and third years respectively; room supplied, but not board; three years' agreement; second-class passage.—Apply, with full particulars, to D. K., c/o Pharm. Journal, 8, Serle St., London, W.C.

DURBAN, NATAL. — Assistant required immediately. Minor qualification; knowledge of Photography an advantage; salary 1st year, £14 per month; 2nd year, £15 per month; 3rd year, £16 per month; increased, if satisfactory, on completion of 3 years' agreement; outdoors; second class passage paid out.—Apply, with references, to S., care of Bryce & Co., 23, St. Mary Axe, London, E.C.

SHANGHAI.—Good Assistant required, to leave England early in September; must be healthy and strong; pure British descent; aged between 24 and 30; abstainer preferred; Protestant; unmarried; possess Minor qualification; of gentlemanly address and possess undeniable references; salary £10 per month first year; £11 second; £12 third; £13 fourth year; second-class passage paid; board and lodging provided; 4 years' agreement.—Address, Shanghai, c/o Messrs. Evans, Lescher and Webb, 60, Bartholomew Close, London, E.C.

CAPE COLONY.—Assistant, immediately. Must be single, possess the Minor qualification, about 25 years of age, and have had good experience in a country business. Also a good and neat Dispenser. Steady and sober habits indispensable. Salary, 1st year, £140 per annum; 2nd year, £150; 3rd year, £160. Sleeping accommodation provided, or equivalent (outdoors), but to find own board. Second-class passage paid out, conditional on a 3 years' agreement being signed.—Address, Cape, c/o Messrs. Evans, Lescher and Webb, 60, Bartholomew Close, London, E.C.

SOUTH AFRICA (healthy coast town).—At once, two qualified Assistants required, one for the Wholesale and the other for the Retail. Must be thoroughly reliable, competent, steady, and of sober habits; latter most essential. Scotchmen preferred; aged from 21 to 25; Minor qualification. For the Wholesale, the Assistant must have had previous experience. For the Retail, the Assistant must have had first-class Dispensing and Retail experience. Salary, 1st year, £13 10s. per month; 2nd year, £14 10s.; 3rd year, £15 10s.; without board and outdoor (sleeping accommodation provided, conditionally, for Retail Assistant). Second-class passage paid out, and allowance on board. Three years' agreement. — Address, South Africa, Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

TEMPORARY or otherwise; abstainer; good reference.—Pharmacist, 107a, Aslett St., S.W.

LOCUM; lady (Minor), wants temporary work.—Forest Glen, Forest Rd., Moseley, Birmingham.

LOCUM; qualified; first-class Dispensing experience; Photography.—Hall, 68, Paget St., Cardiff.

LOCUM; Hospital work; disengaged; qualified.—Spring' Pharm. Journal Office, 8, Serle St., W.C.

ASSISTANT; 35; best London and Provincial experience; disengaged.—Palmer, Henfield, Sussex.

BRANCH or Manager; registered, Prescriber, Tooth Extractor; first-class references.—C. E. Day, Burton Joyce, Notts.

LOCUM; Dispenser (Lady); qualified; disengaged except August.—Iodol, Pharm. Journal Office, 8, Serle St., W.C.

QUALIFIED; 23; 5 ft. 10 in.; outdoors; under qualified directorship only; Williams, Penberthy, Hayle, Cornwall.

LOCUM; 26; qualified; excellent references; Lancashire or Yorkshire districts preferred. — Phenacetin, Pharm. Journal Office, 8, Serle St., W.C.

QUALIFIED; 25; 9 years' good-class Retail and Dispensing experience; West End preferred.—Apply, W. D. Burke, 5, Adrian Villas, Eaton Rd., Margate.

AS Dispenser to Surgeon, or Management of a Retail; qualified; temporary or permanent; good references.—Address, T. R., 30, Matthias Rd., Stoke Newington, N.

AS Dispenser (Hospital, Dispensary, or firm of Surgeons); aged 27; Hall qualification; Hospital experience; highly recommended; permanency.—Steer, 39, Walcot St., Bath.

LOCUM TENENS; days, weeks; moderate; reliable; engagements booked forward.—T. C. Beach, M.P.S., Windsor Edge, Inchbrook, Stroud, Glos. Telegrams: Beach, Nailsworth.

LOCUM or Branch Manager; qualified; 37; Store experience and West-end; Extractor, Prescriber, and knowledge Photography; excellent references.—Statim, 140, Kennington Park Rd.

TERMS FOR ADVERTISEMENTS
IN THE
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Advertisements of **Assistants Wanted, Apprenticeships, For Sale, Partnerships, Businesses for Disposal, Businesses Wanted, Premises to Let,** and **Agencies:**—Fifty words or less, 3s. 6d. Each additional ten words or less, 6d.

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The latest time for receiving Small Advertisements for the current week is Thursday, 4 p.m.; and for Displayed Advertisements, Thursday, 10 a.m.

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All communications respecting advertisements should be addressed to the PUBLISHERS, 8, Serle Street, Lincoln's Inn, London, W.C.

Telegrams:—"Pharmaceutical Journal, Serle St., W.C."

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows:—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

£300 ALL AT.—Unopposed light Retail Dispensing and Prescribing Business; old-established; South coast; well fitted; owner retiring; great scope for increase.—Hydrastis, Pharm. Journal Office, 8, Serle St., W.C.

GRATIS.—Modern Shop in London, S.E., fitted as Chemist's, cost £100, with small amount of stock; owner going abroad; rent £65 per annum, on lease, which may be terminated in 4 or 18 years by tenant; new estate being developed opposite.—Apply, Cinchona, Pharm. Journal Office, 8, Serle St., W.C.

SURREY (20 miles from London).—Retail Dispensing Business; established over 100 years; lovely neighbourhood, in centre of town; good house, good repair; large garden; low rent on lease; good stock; going through ill-health; returns £400, easily doubled; price only £350.—Apply, K., Pharm. Journal Office, 8, Serle St., London, W.C.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Platinum; disused utensils and scraps.—P. Rowsell, 9, Derwent Grove, Dulwich.

Welch's Communion Wine, large size, carriage paid.—Eastman, Forest Lane, Stratford.

OFFERED.

1 lb. Phenacetin, 6s. 4d.; 2 lb. ditto, 12s.; cash with order.—Eastman, Chemist, Stratford.

Fine Seychelles Vanilla Pods, one ounce, free, 1s. 3d.; quantity less.—Row, Braintree.

Photographic Mounts.—500 assorted job slip-in mounts, 10s.—Edward Peck, East Dereham.

"The Dispensatory," half-morocco, new, 27s. 6d.; cost 37s. 6d.—Chemist, 15, Horton Lane, Bradford.

Microscope, almost new; mahogany case; all accessories; cost £10; take £5 or part exchange for good bicycle (free wheel).—Town Dispensary, Burton-on Trent.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

Croquet and Tennis.—Must sell splendid set of latest pattern club Croquet, consisting of 4 large boxwood mallets, 4 coloured boxwood balls, set thick narrow hoops, posts, markers, &c., in case; only 34s. 6d.; worth 58s.; new. Also splendid Tennis set, 52s. 6d.; or articles separately, as follows: Patent self-supporting standards, fitted with iron ground sockets, 15s. 6d.; waterproof net, bound top, 9s. 6d.; 4 superior 15s. racquets, 7s. 6d. each; and 12 splendid balls, 6s. 6d.; all new; approval before payment.—Mr. P. Ralph, Cambridge House, Lakenheath, Suffolk.

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8-FT. run of second-hand chemists' side fittings—mahogany-fronted drawers; mahogany lockers under shelving above with bottles and stock; also an American Soda Fountain, 5 taps and accessories, suitable for a suburban chemist; £8 lot, packed and delivered on rail.—H. Govier, Medical Shop Fitter (late of 22, Gun St., Bishopsgate), 207, Balls Pond Rd., London, N.

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The **PHARMACEUTICAL JOURNAL** is supplied post free for one year to any part of the United Kingdom, the Colonies and abroad on prepayment of **20/-.**

Postal Orders should be made payable to G. Street & Co., Ltd., at Lincoln's Inn Post Office, London, W.C., and all communications respecting Subscriptions to the Journal and Advertisements should be addressed to

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A Copy of this Inset is inserted in every Copy of the ***Pharmaceutical Journal*** issued, and a separate Copy will be forwarded Gratis to any applicant who sends a stamped addressed wrapper to the Publishers. It can also be obtained by personal application, on the day of publication, at any address in the following list

WHERE THE INSET CAN BE OBTAINED.

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17, Bloomsbury Square, London, W.C.
36, York Place, Edinburgh.

Also at the Advertising Agency of Messrs. G. Street & Co., Ltd., 30, Cornhill, E.C.; 8, Serle St., W.C.; and 164, Piccadilly, London, W.

London, E.C.

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City School of Pharmacy, 27, Chancery Lane.

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South London School, Kennington Rd.
Westminster College of Chemistry, Trinity Square.

Provinces.

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BIRKENHEAD.—Mr. H. B. Morgan.
BIRMINGHAM.—Mr. J. Poole, 13, Gt. Hampton St.
Mr. C. Thompson, Sparkbrook.
Mr. G. E. Perry, 171, Hagley Rd., Edgbaston.
Messrs. F. Green & Co., Phœnix Mills, 393, Farm St.
Mr. J. Austin, 395, Nechells Park Rd., Nechells.
Messrs. Southall, 19-21, Lower Priory.
BLACKPOOL.—Mr. C. H. Turver, 40, Market St.
BOLTON.—Mr. Percy Knott, 1, Blackburn Road.
BOOTLE.—Mr. H. Wyatt, 223, Stanley Road.
BOSTON.—Mr. B. J. Kent, Spilsby Road.
BOURNEMOUTH.—Mr. F. E. Bilson.
BRADFORD.—Mr. A. H. Waddington, 31, Darley St.
Mr. J. A. Mitchell, 33, St. Mary's Rd.
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BRENTFORD.—Mr. A. Wood, 116, High St.
BRIGHTON.—Mr. J. R. Gwatkin, 49, Grand Parade.

Provinces.—*Continued.*

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Mr. E. F. Young, 67, Wells Road.
BURNLEY.—Mr. J. A. Heaton, 121, St. James' St.
BURY ST. EDMUNDS.—Mr. O. A. Clark.
CAMBRIDGE.—Mr. A. S. Campkin, 11, Rose Cresc't.
CANTERBURY.—Mr. C. Bing, 43, St. George's St.
CARLISLE.—Mr. J. Hallaway, 5, Devonshire St.
CHELTENHAM.—Mr. W. Barron, 1, North Parade.
CHESTER.—Messrs. Davies & Shepheard.
CHORLEY.—Mr. W. Hill, 25, Market St.
COLCHESTER.—Mr. A. Weddell, 105, High St.
CREWE.—Mr. J. Cumming, 6, Victoria St.
CROYDON.—Mr. J. Clarke, 38, George St.
DARLINGTON.—Mr. J. Robinson.
DARWEN.—Mr. R. Shorrock, 6, Market St.
DEVONPORT.—Mr. C. T. Weary, 17, Trafalgar Pl.
DEWSBURY.—Mr. R. Gledhill, 61, Westgate.
DONCASTER.—Mr. M. H. Stiles, 2, Frenchgate.
DOVER.—Mr. R. M. Ewell, 34, Townwall St.
ENFIELD.—Mr. F. Goldby, Enfield Town.
EXETER.—Mr. D. Reid, 2, Queen St.
GATESHEAD.—Mr. Matthew Bell, 9, Brinkb'k Av.
GLOUCESTER.—Mr. W. Minchin, 15, Westgate St.
GRANTHAM.—Mr. W. Whysall, High St.
GRAVESEND.—Mr. R. Feaver Clarke 21, High St.
GRIMSBY—Mr. H. W. Colley, 253, Cleethorpe Rd.
GT. YARMOUTH.—Mr. W. S. Poll, 32, Regent Rd.
HARROW-ON-THE-HILL, Mr. S. J. Gunn, High St.
HARTLEPOOL.—Mr. J. Horsley, 104, High St.
HASTINGS.—Messrs. J. Bell & Co., 22, Robertson St.
HEXHAM.—Messrs. Gibson & Son, 16 & 18, Fore St.
HEYWOOD.—Mr. F. Hazlitt, Market St.
HITCHIN.—Messrs. W. Ransom and Son.
HORNCASTLE.—Messrs. W. Kemp & Son.
HUDDERSFIELD.-Mr. R. C. Walshaw, 4, Market Pl.
HULL.—Mr. C. B. Bell, 6, Spring Bank.
Mr. C. Hoyles, Holderness Road.
Mr. A. Richardson, 443, Hessle Road.
IPSWICH.—Messrs. Wiggin & Son, 34, St. Matthew's.
JARROW-ON-TYNE, Mr. J. D. Rose, 18, Ormonde St.
KENDAL.—Messrs. Severs & Bateson.
KIDDERMINSTER.—Mr. M. Smith, 48, Oxford St.
LANCASTER.—Mr. J. Vince, 37, Cheapside.
LEEDS.—Mr. W. S. Baxter, Bramley.
College of Pharmacy, 19, Springfield Place.
Mr. F. C. Long, Headingly.
Messrs. Reynolds & Branson, Ltd., 13, Briggate.
LEICESTER.—Mr. F. W. Goodess, Hotel St.
LINCOLN.—Mr. J. T. Birkbeck, 5, Bailgate.
LIVERPOOL.—Mr. A. Buck, 179, Bedford St.
Mr. W. H. Clubb, 138, Smithdown Rd.
Mr. C. W. Cooke, 323, Park Rd.
Mr. J. W. Kelly, 16, County Road, Walton.
School of Pharmacy, 6, Sandon Terrace.
Messrs. Symes & Co. Ltd.
Mr. F. Walker, Beacon Lane.
LYNN.—Mr. W. W. Crisp, 3, Saturday Market.
MAIDSTONE.—Mr. F. Corfe, 5, Gabriels Hill.
MANCHESTER.—Mr. J. H. Nidd, 714, Rochdale Rd.
Mr. H. Kemp, 35, Wilbraham Rd., C/H.
Mr. C. Swinn, Upper Moss Lane.
Mr. G. L. Westmacott, 17, Market St.
Mr. J. B. Williams, 42, Brook St.
Messrs. Jas. Woolley, Sons & Co., Ld.
Northern College, 100, Burlington St.
Manchester College, 225A, Oxford St.
MANSFIELD.—Mr. D. J. Patterson, West Hill.
MORPETH.—Mr. J. Whittle, Bridge St.
NEWCASTLE-ON-TYNE.—School of Chemistry, 55, Northumberland St.
Messrs. Proctor, Son & Clague, 11, Grey St.
NEWPORT (Mon.).—Mr. T. P. Garrett.
NORTHWICH.—Mr. G. Humphreys, High St.
NOTTINGHAM.—Mr. F. R. Sergeant.
School of Pharmacy, 13, Victoria St.
NORTHAMPTON.—Mr. John Bingley.
NORWICH, Messrs. Fuller & Co., Rampant Horse St.
NUNEATON.—Mr. G. Iliffe, Market Place.
OLDHAM.—Mr. H. Bates, 38, George St.
OXFORD.—Mr. T. J. Burbank, 116, Walton St.
PETERBOROUGH.—Messrs. Sturton & Sons.
PLYMOUTH.—Messrs. Balkwill & Co.
Mr. C. J. Park, Mutley Plain.
PORTSMOUTH.—Mr. T. Brewis, 325, Fratton Rd.

Provinces.—*Continued.*

PRESTON.—Mr. F. A. Williamson, Garstang Rd.
RAWTENSTALL.—Mr. J. E. Lord, Rossendale.
REDHILL.—Mr. W. H. Fowler, 2, Station St.
ROMFORD.—Mr. J. W. Lasham, High St.
ROTHERHAM.—Mr. J. Horsfield, 1, College St.
RYDE.—Mr. H. Pollard, 168, High St.
ST. HELENS, Mr. J. G. Wallbridge, 52, Liverpool Rd.
ST. LEONARD'S-ON-SEA.—Mr. C. R. Stedman.
SCARBOROUGH.—Mr. J. Whitfield, 113, Westboro.
SHEFFIELD.—Mr. H. Antcliffe, West Bar.
Mr. P. Carr, 85, Ecclesall Rd.
College of Pharmacy, 116A, The Moor.
Mr. G. T. W. Newsholme, 27, High St.
Mr. J. B. Pater, Broomhill.
Mr. G. Squire, 19, Haymarket.
SHREWSBURY.—Mr. W. G. Cross, 70, Mardol.
SOUTHAMPTON.—Messrs. Randall & Son.
SOUTHPORT.—Mr. Jas. Righton, 293, Lord St.
STAFFORD.—Mr. J. Averill, 10, Market Square.
STOCKPORT.—Mr. W. B. Orton, 67, St. Petersgate.
STOCKTON-ON-TEES.—Messrs. Brayshay & Son.
STOKE-ON-TRENT.—Mr. F. Adams, High St.
SUNDERLAND.—Mr. C. Ranken, Stockton Road.
TODMORDEN.—Mr. H. P. Lovatt, 6, Water Street
TOTTENHAM.—Mr. A. E. Tanner, Tottenham Ter..
TUNBRIDGE WELLS.—Mr. A. E. Hobbs.
ULVERSTON.—Mr. R. Willan, 5, Market St.
WAKEFIELD.—Mr. J. H. Chaplin, 60, Westgate.
WALSALL.—Mr. E. M. Elliott, 42, Park St.
WARRINGTON.—Mr. H. N. Ashton, 63, Sankey St.
Mr. J. Rymer Young, 40, Sankey St.
WESTON-SUPER-MARE.—Mr. John Cooper.
WIDNES.—Mr. C. J. Bennett, 32, Victoria Rd.
WIGAN.—Mr. J. Phillips, 58, Wallgate.
WINCHESTER.—Mr. A. E. Ghaston, High St.
WINDSOR.—Mr. B. Westlake, 91, Peascod St.
WOLVERHAMPTON.—Mr. T. J. Gibson.
WOOLWICH.—Mr. A. J. Wing, 69, Powis St.
WORKINGTON.—Mr. J. R. Mason, 4, Pow St.

Wales.

ABERAVON.—Mr. G. B. Loveluck, High St.
BANGOR.—Mr. Owen Jones, Market Place.
FLINT.—Mr. O. William Jones, Apothecaries' Hall.
HOLYHEAD.—Mr. F. J. Jones, 12, Market Place.
LLANRWST.—Mr. O. I. Jones, Apothecaries' Hall.
MERTHYR.—Mr. E. W. Harris, 128, High St.
SWANSEA.—Mr. N. M. Grose, 8, Temple St.
WREXHAM.—Mr. C. G. Caldecott, Regent St.

Scotland.

ABERDEEN, Mr. John Cruickshank, 42, George St.
ARBROATH.—Mr. A. Naysmith, High St.
DUNDEE.—Mr. C. Kerr, 56, Nethergate.
EDINBURGH.—Mr. J. A. Forret, Brougham Place.
Mr. C. F. Henry, 1, Brandon Terrace.
FALKIRK.—Mr. W. Forgie, 105, High St.
GLASGOW.—Mr. T. Dunlop, 181, Albert Road.
Mr. J. A. Russell, 212, New City Rd.
School of Pharmacy, 180, West Regent St.
Mr. J. W. Sutherland, 127, Buchanan St.
GREENOCK.—Mr. A. McNaught, 4, W. Blackhall St.
HAWICK.—Mr. W. S. Turnbull, 2, Dovemount Pl.
KIRKCALDY.—Mr. David Storrar, 228, High St.
LEITH.—Mr. J. Bowman, 3, Duke St.
LINLITHGOW.—Mr. A. Spence, 135, High St.
MONTROSE.—Mr. A. Davidson, 172, High St.
PAISLEY.—Mr. A. Fraser, 100, High St.
PETERHEAD.—Mr. J. F. Tocher, 1, Chapel St.
STIRLING.—Mr. John Raffan, 16, Port St.

Ireland.

BELFAST.—Messrs. Grattan & Co., Ltd.
Mr. J. B. Robinson, Duncairn Medical Hall.
Mr. J. C. Payne, 13, Shaftesbury Sq.
CORK.—Mr. T. R. Lester, 106, St. Patrick St.
DALKEY.—Mr. G. D. Beggs, Medical Hall.
DUBLIN.—Apothecaries' Hall, 40, Mary St.
Mr. J. I. Bernard, 26, Clare St.
LIMERICK.—Messrs. John Laird & Co.
LONDONDERRY.—Messrs. Maxwell, Greer & Co
WATERFORD.—Messrs. G. White & Sons.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

OFFICIAL NOTICES.

CORONATION VACATION.

The Society's Premises will be Closed on June 26th, 27th and 28th.

LIBRARY IN LONDON.

The Library in London is not at present open in the evenings on Thursdays.

LIBRARY CATALOGUE.

Members or Student-Associates desirous of obtaining a copy of the new edition of the Library Catalogue (published in 1901) should make application to the Librarian, 17, Bloomsbury Square, London, W.C.

NOTES IN PARLIAMENT.

Milk-Blended Butter.—The Bill which was the other day brought in by Mr. Hanbury to amend the Food and Drugs Act has now been published. The principal clause recites that butter to which any substance has been added whereby the amount of water in the butter is increased above the standard of 16 per cent. shall only be sold as "butterine," and with a label or wrapper disclosing the approximate amount of water. Section 8 of the Act of 1899, which restricts the amount of butter fat in margarine, and declares that any substance made in imitation of butter is margarine, is not to apply to butterine. The Act will come into operation on January 1 next, excepting as regards brine-cured butter, which is so largely prepared in Ireland, and for which the date will be January 1, 1904.

Magnalium.—The War Secretary has had his attention called to the metal known as magnalium, of which swords for the Austrian cavalry are, it is said, being made. In the course of a written reply to a question addressed to him by a member of the House of Commons, he states that magnalium has been experimented upon for scabbards, and also for small-arm cartridges, but has not been found suitable, and that, moreover, it would be quite unfit for sword blades, as it contains aluminium.

The Patent Law.—In a written reply to Colonel Denny, the President of the Board of Trade states that he has good hope that the Bill for amending the Patent Laws may be passed during the present session of Parliament. It is understood that the right hon. gentleman has drafted a new clause with the object of providing that foreigners shall only be allowed to take out patents in England on the condition that they will work them in this country. It will be remembered that on the occasion of the recent deputation which waited on Mr. G. Balfour it was represented that the absence of a provision to this effect places the British inventor at a serious disadvantage as compared with competitors abroad.

The Taxation of Spirits and Glucose.—In the House of Commons on Tuesday the Finance Bill having been recommitted, two new clauses were moved by the Chancellor of the Exchequer and agreed to. The first of the clauses raises, as from June 17, the Customs duty on imported spirits, other than rum and brandy, from 10s. 4d. to 10s. 5d., and the allowances from 2d. and 4d. to 3d. and 4d. The second of the clauses increases the Customs duty on solid glucose from 2s. 9d. to 3s. 3d., and on liquid glucose from 2s. to 2s. 6d.

The Duty on Arrowroot.—The ramifications of the Chancellor of the Exchequer's grain duty are of such a character that not only starch but arrowroot, cassava powder, and tapioca, potato flour, and sago, come within its operation, these being liable to the imposition of 5d. a cwt. like flour and meal, while on wheat, barley, etc., the duty is 3d. a cwt. When the Finance Bill was before the House of Commons on Wednesday last, Sir J. Leng, though he did not go so far as to move an amendment, warned the Chancellor of the Exchequer that as regards starch his duty would have a far-reaching and injurious effect on certain industries, especially in Dundee. Mr. Channing, who was supported by Mr. Lough, moved to have arrowroot exempted. He contended that it was not a grain at all, and that the tax upon it would injure some relatively small traders in this country. The Chancellor of the Exchequer admitted that the yield would be slight, but he in effect held that the tax on this and other similar articles was necessary to buttress, as it were, the more important elements of the grain duty. The amendment was negatived by 161 against 107.

MISCELLANEOUS NEWS.

"The People's Chemist."—A copy of the *Kent Herald*, dated June 4, has been sent to us and certain paragraphs in an advertisement column headed "Medical" are marked for our attention. The character of the advertisements is such that their publication does not redound to the credit of the paper in which they appear, but the editor of the *Kent Herald* is not the only editor who advertises pills which will cure discharges from the urinary organs. All these so-called medical advertisements emanate from the Medical Hall of Canterbury where there apparently resides one Lander, the People's Chemist. This person says that he has a sure cure for influenza, a specific for tic doloureux, a most effectual remedy for coughs, colds, etc., and every modern appliance for sight testing. He also sells penny-royal and steel pills for females, and, as we have already said, pills for venereal discharges. If the *Kent Herald* could dispense with the patronage of Lander a regard for decency would be manifested and we are certain that no loss to the public would accrue.—*Lancet*

Factory and Workshops Act.—At Brighton Police Court, Ralph Gillett, of 25, St. George's Road, Messrs. Davis and Company, trading as the Sussex Drug Company, at 131, Sussex Street, and Frances Hurst, of 103, Western Road, were summoned at the instance of Mr. Seymour, H.M. Inspector of Factories, for failing to send to the Chief Inspector of Factories a correct return specifying the number of persons employed in their factories and workshops during 1901.—Mr. Woodgate, H.M. Inspector of Factories, attended and explained that when, in January of the present year, the new Act came into operation, certain forms were sent to the occupiers of factories and workshops, requesting a return of the persons employed to be sent in by March 1. A quarter of a million of the notices spoken of were sent out, and only some 50 per cent. had been returned. Instructions had therefore been given to prosecute in cases in which there had been no return.—Defendants pleaded guilty.—The Chairman said it was in the interest of the public that the Factory Act should be carried out, and in each instance the Bench imposed a fine of 5s. and costs.—The Chairman added that it was of extreme importance that so beneficial a measure as the Factory Act should be fully carried out, and traders should give every facility to the Inspectors.

Poisoning by Sulphonal is the subject of a letter in the *Standard*, written by a correspondent who professes to give his or her personal experience of the great danger people—more especially women—run in regarding sulphonal as a harmless sleep-producing agent. It is alleged—but surely on insufficient evidence—that, for years, the majority of medical men have assured too trusting patients that sulphonal is a perfectly harmless opiate—as harmless, according to their description, as a bread pill. An American doctor, however, has informed the writer of the letter that the drug causes temporary insanity if not taken with extreme caution, and that an unusual number of sudden deaths from heart failure occurring during the past ten years have been traced to its pernicious influence. It is further stated that a comparatively limited number of medical men of late have advised caution in the use of sulphonal, on the ground that its abuse resulted in temporary insanity, but few mention that, taken constantly, it will cause death as surely after a time as arsenic or strychnine. It is said to undermine the strength very gradually, so that the victim is only aware that she feels weak, and languid, and ill. Those sensations increase till, in a longer or shorter period, if the drug continues to be taken constantly, serious symptoms appear, which culminate in coma and death. Three cases of this poisoning by sulphonal have lately come to the writer's knowledge as undoubted facts, and he or she feels it is a matter of conscience to publish the facts, in the hope that they may prove a warning to many who take the drug in the firm belief that it is quite innocent.

SOCIETY AND ASSOCIATION NEWS.

British Pharmaceutical Conference.—The pink circular is now being sent out, and contains particulars concerning hotel accommodation at Dundee, in addition to the programme for the week beginning August 11, and other information of interest to those proposing to attend the Dundee meeting.

Chemists' Assistants' Association.—On Thursday evening, June 12, the Council of the C.A.A. and a few friends and members had dinner at the Horse Shoe Hotel, Tottenham Court Road, W.C., to wind up the session and to bid God-speed and a safe journey to Mr. A. C. Franklin, one of the newly-elected members of the Council of the Association, who is leaving England early in July for Hong Kong, where he is to take up an appointment in the Government Civil Hospital. Mr. J. Wicliffe Peck (President) occupied the chair, and a very pleasant evening was spent.

Edinburgh Pharmacy Club.—Messrs. Clarke and Gray (Duncan, Flockhart and Co.) beat Messrs. Anderson and Cochrane (Duncan's Classes) in the final of the spring competition for the T. and H. Smith Trophy.

Edinburgh Pharmacy Club *v.* Edinburgh Chemists' Club.—Teams representing these golf clubs brought off a match over the Braids last week. The result was a win for the Pharmacy by 5 holes:—

Pharmacy.	Holes.	Chemists.	Holes.
D. S. Philp	2	Jas. Stott	0
A. C. Aitken	1	A. W. Wilson	0
C. Stewart	0	H. D. Alexander	2
J. J. Sutherland	1	Jas. Finlay	0
J. A. Gray	5	W. C. Baker	0
J. Stewart	1	Geo. Lunan	0
J. Cochrane	0	W. G. McNab	4
D. McLaren	1	D. N. Wylie	0
	—		—
	11		6

Edinburgh Chemists', Assistants', and Apprentices' Association.—The second botanical excursion of the summer session took place on the evening of Friday, June 13, leaving Waverley Station at 8.15 p.m. for Inveresk, under the leadership of Mr. J. Rutherford Hill. The weather was fine, and about twenty-five members attended. The party proceeded to explore the railway embankment back to the point where the railway crosses the river Esk, and then walked down the river bank to Musselburgh, and thence to Joppa, where electric tramcar was taken back to town. At the Inveresk junction quite a number of unusual plants were gathered on the embankment, including *Lepidium draba* (in great abundance), *Erysimum orientale*, *Silene inflata*, var. *maritima*, *Medicago sativa*, and *Cerinthe minor*. The following plants were gathered in addition to many previously got in the first excursion:—*Aquilegia vulgaris*, *Aconitum paniculatum*, *Papaver dubium*, *P. rhœas*, *Nasturtium officinale*, *Reseda luteola*, *Viola arvensis*, *Silene inflata*, *Lychnis vespertina*, *Malva sylvestris*, *Geranium molle*, *G. dissectum*, *Trifolium agraria*, *Vicia cracca*, *Potentilla reptans*, *P. anserina*, *Matricaria parthenium*, *Urtica urens*, *Salix fragilis*, *S. alba* and many others. The ground was very rich, and it was felt that another evening would be required to do justice to it.

Forfarshire and District Chemists' Association.—The annual meeting was held in Dundee on Wednesday, June 18, Mr. Kermath, St. Andrews, presiding. There was a large attendance of ladies and gentlemen. Mr. A. B. Anderson (unfortunately absent through indisposition) was elected President for the coming year; Mr. Park, Broughty Ferry, Vice-President; and Mr. William Cummings, Hon. Secretary.—Mr. James Russell proposed a vote of thanks to Mr. Kermath for the great services he had rendered as President of the Association during the past year. This was heartily responded to. The programme prepared by the local committee for the Conference was considered and approved. It was resolved that Mrs. A. B. Anderson be president of the ladies' committee. Mr. James Russell was appointed secretary to the committee. Mr. Kerr, as president of the local committee, read correspondence which he had had with Professors Steggall, Geddes, Walker, and Marshall, in which they promised their assistance at the Conference. Mr. Ford, of Kirriemuir, moved a vote of thanks to the Chairman for presiding. The ladies then held a short preliminary meeting, at which much enthusiasm was displayed, all being anxious to assist in furthering the success of the Conference.

Exeter Association of Chemists and Druggists.—At a meeting held on June 17, under the presidency of Mr. G. Stocker, the subject of pharmaceutical education was discussed at some length, particularly in view of the possible discontinuance of the pharmacy class at the Royal Albert Memorial College.—On the motion of Mr. Rowsell, seconded by Mr. Lake, it was resolved: "That this meeting considers it advisable that the classes in pharmacy and materia medica be not discontinued, but that greater provision be made for the practical teaching of those subjects. Subject to this being done, the members of this Association promise support to these classes, but would suggest the advisability of their being advertised in the technical journals and notices being sent to the chemists of the neighbourhood."—The Honorary Secretary (Mr. H. Wippell Gadd) reported that he had been approached by the secretaries of the Royal Institute of Public Health, which holds its annual congress at Exeter from August 20 to 26, with regard to the proposed discussion on the sale of poisons.—On the motion of Mr. Stone, seconded by Mr. Rowsell, it was resolved that Mr. W. S. Glyn-Jones be invited to visit Exeter and read a paper to the Congress on the pharmaceutical aspect of this question.

Glasgow and West of Scotland Chemists' Trade Association.—The objects of this Association are: (1) To promote the trade interests of its members, and to maintain their rights in the exercise of their business; (2) to regulate the prices of proprietary and other articles, so as to yield a fair and reasonable profit to its members; (3) to approach manufacturers to fix a minimum retail price for their goods, so as to yield at least 20 per cent. profit; (4) to communicate with other associations, in order to secure their co-operation and support in attaining these objects.—The Executive Committee of the Association has now drawn out a programme whereby it is hoped to get minimum wholesale and retail prices fixed for proprietary articles. A petition, which has been prepared and is being extensively signed in Glasgow and the district, is to be submitted to a conference of manufacturers of proprietary medicines proposed to be held in London or Glasgow early next winter, stating the grievances of the retail drug trade, and requesting the co-operation of the manufacturers to have these grievances removed. For the past three weeks a paid canvasser has been employed by the Association to call upon chemists in business with the object of obtaining signatures to this petition, with the result that 98 per cent. of the registered chemists in Glasgow have signed it. The Executive is also about to ask a large number of the wholesale houses in Scotland and England to lend their assistance by getting their travellers when on their journeys to ask for signatures throughout the trade. As it is desired to make the movement a national one, the Executive has communicated with all similar associations throughout the country, suggesting that they also should take the petition in hand and get it largely signed in their various districts, and already twenty-nine local associations have sent replies promising active participation in the movement, while others have signified their intention of having the proposal discussed at the first meeting of their associations. It is intended that at the conference of manufacturers above alluded to deputations from all the associations should appear, present their various petitions, state the grievances of the retail trade, and solicit the help of the manufacturers in the matter. It is interesting to add that the membership of the Glasgow Chemists' Trade Association has now reached 130 members.

MARKET REPORT.

London, Thursday, June 19, 1902.

The preparations for the Coronation appear to occupy attention. to the detriment of business, while the advent of finer weather, combined with the almost unhoped-for favourable turn which matters have taken in South Africa, have so far failed to produce any tangible improvement, and it is now much to be feared that we shall see dull trade until the autumn. Almost everything is dull and weak, with the exception of Eserine, which has been advanced very considerably. In the speculative market for Quinine things have gone from bad to worse, and sales of Sulphate have been effected at 3½d. per oz. below makers' nominal prices. Cod Liver Oil has advanced further in value, and prices are now at a very high figure. We give below some current quotations for articles of principal interest:—

ACETANILIDE—Is very dull at 8d. to 10½d. per lb., according to make, quantity, and packing.

ACID BORACIC.—Crystals, 22s. per cwt.; powder, 24s.

ACID CARBOLIC—Continues quiet on basis of 6¼d. to 6½d., according to quantity and make, for the 34-35° C. ice crystal in large bulk packing, other qualities and packing being quoted at usual difference. Crude, 60° F., 1s. 10½d. per gallon; ditto 75° F., 2s. 4d. Liquid, 95-98 per cent. of pale straw colour, 11d. to 1s. 1d. per gallon in 40-gallon casks; ditto 25-30 per cent. of dark colour, 8d. to 9d. per gallon in same packing.

ACID CITRIC—Quiet at 1s. 0¼d. to 1s. 0½d. per lb. for crystals in 5-cwt. barrels.

ACID OXALIC—Is still quoted 2½d. to 2⅝d. per lb. net, free delivered London.

ACID TARTARIC.—English, 11½d. per lb.; foreign, 10½d.

ALUM.—Lump £5 10s. to £5 12s. 6d., and ground £6.

ASHES.—Pots 25s. 6d., pearl 40s.

BORAX.—Crystals, 13s. per cwt.; powder, 14s.

BROMIDES—Are steady at unchanged prices.

CAMPHOR.—English refiners still quote 2s. 3½d. per lb. for Bells and Flowers, price of Tablets being also unchanged.

CINCHONA BARK.—To-day's auction in Amsterdam is reported to have opened at a decided reduction. Full results had not, however, become known at time of going to press.

COAL TAR DISTILLATION PRODUCTS.—Toluol, commercial, 9d. per gallon; ditto, pure, 6d. per lb. Benzole, 50 per cent., 7d. per gallon; ditto 90 per cent., 8d. Creosote, 1¾d. to 2¾d. per gallon, according to quantity, packing, and delivery. Crude Naphtha, 30 per cent. at 120° C., 3½d. per gallon; solvent Naphtha, 95 per cent. at 160° C., 1s. 3d. per gallon; ditto 90 per cent. at 160° C., 10d.; ditto 90 per cent. at 190° C., 9½d. Anthracene A, 1½d. per unit. Pitch, 50s. per ton f.o.b. Tar, refined or crude, 13s. per barrel, 2¾d. per gallon.

CODEINE—Is unchanged at 10s. 10d. per oz. for the pure alkaloid, 8s. 8d. per oz. for the Phosphate, and 9s. 7d. per oz. for the Muriate and Sulphate Salts.

COD LIVER OIL.—The reports as to result of the fishing continue very unfavourable, and best new Norwegian oil is now quoted 150s. per barrel, there being practically no good oil obtainable below this figure. It must not be overlooked that even if these famine prices be continued over the summer they are more than likely to receive a decided check later on when the new Newfoundland oil becomes available.

CREAM OF TARTAR—Is firm at 74s. per cwt. for first white crystals on the spot. Powder, 76s. ditto; foreign, 98 per cent., 78s. 6d. per cwt.

ESERINE.—Owing to the practical absence of supplies of raw material (Calabar Beans), makers of Eserine advanced price to 8s. per gramme for the Sulphate and Salicylate salts, and to 9s. per gramme for other salts and for the pure alkaloid. Even at this extremely high price all orders have first to be submitted for confirmation.

GLYCERIN.—The combined makers maintain price of £67 per ton for 5-ton lots for best white odourless, double-distilled, chemically pure, 1·260 s.g. quality, in tins and cases (2 or 4 × 56 lbs. tins in a case), while there are offers from outside makers at several pounds per ton below above figure.

IODIDES.—The combined makers so far made no alteration in their prices.

MENTHOL.—Kobayashi brand of dry white crystals is quoted 14s. 6d. to 14s. 9d. per lb. in cases of 12×5lb. tins.

MERCURIALS—Firm at late quotations.

MORPHINE—Continues very quiet at unchanged prices—viz., 3s. 9d. per oz. for the Hydrochlorate powder and 2d. per oz. more for the crystalline salt.

OILS (FIXED) AND SPIRITS.—Linseed Oil slow and about 5s. easier. London spot pipes £30 5s., barrels £30 10s., month £30 5s., July-August £30 5s. to £30 7s. 6d., September-December £29 10s. Hull naked spot £29 10s., June-August £29 10s., September-December £28 10s. Rape Oil quiet. Ordinary Brown on the spot barrels £25 10s., July-August £25 10s., September-December £25 10s. English Refined spot £27. Ravison not offering. Cotton Oil quiet. London crude spot £24 5s., July-August £24 5s. Refined spot £26 15s. to £27 15s. Hull naked Refined spot £24 15s., July-August £24 15s., November-April £21 12s. 6d. Crude spot £23 15s., June-August £23 15s., November-April £20 10s. Olive Oil: Mogador £31, Spanish £32, Levant £31 Cocoanut Oil easier. Ceylon spot £32 10s., afloat £29 15s., c.i.f., June-July £29 5s. c.i.f., August-September £29 c.i.f., September-November £28 15s. c.i.f. Cochin spot £37, August-October £32 10s. c.i.f. Mauritius £32 to £33. Palm Oil: Lagos on the spot quoted £28. Castor Oil quiet. Belgian spot, 1sts £26, 2nds £23; July-December, 1sts £25, 2nds £23. Barrels free, ex wharf, London, 2½ per cent. discount. Hull made, guaranteed pure, November-December deliveries (equal monthly quantities), 1sts £25 per ton, in barrels, delivered free, ex wharf, London, less 2½ per cent. discount. Turpentine: The easier feeling now prevailing has considerably checked operations in this market. American spot 39s. 6d., June 36s. 9d., July 15 36s., July 35s. 4½d., August 35s. 3d., September-December 35s. 3d., January-April 35s. 9d. Petroleum Oil dull. Russian spot quoted 5⅞d. to 6¼d. American spot 6⅝d. to 6⅞d., Water White 7⅝d. to 7⅞d. Refined Roumanian on spot 5¾d. to 5⅞d. Lubricating Oil: Pale American spot quoted £5 12s. 6d. to £7 10s., Black £5 to £6. Russian Black £5 to £6, pale £6 15s. to £7 10s. Petroleum Spirit: American ordinary 8d., Deodorised 8¼d.

PHENACETIN.—While the English consumer is still expected (?) to pay the tangibly advanced price of 6s. per lb., the article is obtainable, if guaranteed for export only, at 4s. 8d. per lb. for 10-cwt. lots, up to 5s. 3d. per lb. for small quantity. It will be interesting to note what quantities the makers succeed in foisting on the English consumer at the figure which our good friends in Germany have decided that we are to pay for our home wants in the article in question. We hardly think that the sale for home consumption will be very large.

PILOCARPINE.—The combined makers still quote 3s. per gramme for the pure Alkaloid, and 2s. 6d. per gramme for the Muriate and Nitrate Salts.

PRUSSIATE OF POTASH.—Beckton quotes 5d. per lb.; other English makers 5¼d.

QUICKSILVER—Very steady at £8 15s. per bottle from first hand.

QUININE SULPHATE.—So far, makers made no change in their price, which remains 1s. 3d. per oz. for B&S or Brunswick Sulphate, for 1,000 oz. lots in 100 oz. tins, while the slump in the speculative market has made further progress, and sales in quantity of above brands were made yesterday at 11½d. per oz., a difference of 3½d. per oz. against makers' present prices! —a bright look-out for the belated speculators in the article.

SPICES.—Cloves: 20 cases Penang sold without reserve, dark, picked, rather damp at 5½d.; 20 bales Zanzibar sold in small lots, including good bright at 4d. Ginger: 165 bags Cochin sold, fair washed rough at 38s. Jamaica rather easier; fair to good bright sold at 48s. to 59s., low middling to middling at 40s. to 43s., ordinary to good ordinary at 37s. to 39s. Black Pepper in good supply and easier; Singapore bought in at 5½d., a fair quantity Penang sold without reserve at 4¾d. White Pepper all bought in, Singapore at 9½d. to 11d., Penang at 8¾d. Pimento quiet and steady; of 132 bags 32 sold at 2½d. to 2⅝d. for fair.

SULPHATE OF AMMONIA—Weak. Grey 24 per cent. London prompt, £12 12s. 6d. Hull prompt, £12 10s. Leith prompt, £12 10s. Beckton July-September, £12 15s.; October-March, £11 17s. 6d. Beckton terms prompt, £12 12s. 6d.

SULPHONAL—Continues unchanged, Bayer's make still offering in limited quantity from the makers at 5s. per lb. for crystals or powder in bulk paper parcels.

JEWSBURY & BROWN'S
MINERAL WATERS
MANCHESTER.
PURVEYORS TO THE KING.

BUY FROM THE DIRECT IMPORTERS
SPONGES
FOR CHEMISTS' TRADE.
I. & M. COHEN
Sponge Merchants, Importers and Exporters,
Contractors to H.M. Government,
35 & 54, HOUNDSDITCH, & 66, ST. MARY AXE
LONDON, E.C.
Every Description always on hand.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. William Walker, M.P.S., of Downfield, near Dundee, has been appointed to the management of the Post Office at Downfield.

Mr. G. Claridge Druce, Hon. M.A. Oxon, pharmaceutical chemist, 118, High Street, Oxford, has been admitted a member of Magdalen College, Oxford.

Lieut. John Gibson, chemist, Hexham, of the A Company, 1st V. B. Northumberland Fusiliers, will, it is expected, be in charge of the E (Bellingham) Company during the week at camp at Aldershot (Coronation week).

PUBLICATIONS RECEIVED.

Berichte uber Land-und Forstwirtschaft in Deutsch-Ostafrika. Herausgegeben vom Kaiserlichen Gouvernement von Deutsch-Ostafrika Dar-es-Salâm. Band I. Heft I. and II. Pp. 1-204. Price 2m. 40pfg. Heidelberg: Carl Winter's Universitätsbuchhandlung. 1902. From the Governor.

Encyclopædia Britannica. 2nd vol. of the new volumes, being Vol. XXVI. of the complete work. Aus.—Chi. Pp. xxii. + 763. London: The *Times*, Printing House Square, E.C. 1902. From the Publishers.

MARRIAGES.

Robbins—Cloak.—On June 11, at Christ Church, Westgate-on-Sea, Robert William Robbins, chemist, of 44, St. Leonards Road, Bexhill on-Sea, to Frances Mary, only daughter of George Cloak, Montagu House, Westgate-on-Sea.

Forrester—McNiven.—At Salisbury Cottage, Falkirk, on the 17th inst., by the Rev. A. Ross Taylor, M.A., Andrew Forrester, chemist, Falkirk, to Jane Helme, elder daughter of James McNiven, chemist, Falkirk.

TRADE NOTES AND NOVELTIES.

Messrs. Sparks, White and Co., 62, St. John Street, E.C., announce that their premises will be closed from Wednesday evening, the 25th inst., until Monday morning, 30th inst.

Messrs. Burroughs, Wellcome and Co. ask us to state that their offices, works, and warehouses will be closed from the evening of Wednesday, June 25, until the morning of Monday, June 30.

Messrs. T. and H. Smith and Co., 22, City Road, London, E.C., announce that owing to the Coronation holidays their warehouses and offices here will be closed on Thursday 26, Friday 27, and Saturday 28 inst.

Mr. H. S. Cox, chemist and druggist, High Street, Kettering, has moved from his old premises to a new pharmacy, which has been fitted up with an entire set of new mahogony and plate-glass fittings by Messrs. Ayrton and Saunders, Liverpool.

New Tabloids.—Messrs. Burroughs, Wellcome and Co., Snow Hill Buildings, London, E.C., have recently introduced tabloids of hydrargyri succinimidum, gr. 1/5 (0·013 Gm.), for hypodermic use. They are issued in tubes containing 20.

Messrs. Kay Brothers, Limited, St. Petersgate Mills, Stockport, announce that they are closing their works for the whole of Coronation week in celebration of the event, and it is therefore advisable to order supplies in advance, or delay in delivery may occur.

Mr. W. Sime, chemist and druggist, 146, Lochee Road, Dundee, has had his pharmacy fitted with plate-glass and mahogany fittings throughout, with two panelled and silver-plate glass window enclosures. There is some very fine carving in the work done by Messrs. Ayrton and Saunders, and the whole appearance is pleasing.

Messrs. Thomas Tyrer and Co., Limited, Stratford, London, E., announce that owing to the Coronation festivities their warehouses, offices, and works will be entirely closed on Thursday, June 26, Friday, June 27, and Saturday, June 28 (annual outing). They will esteem it a favour if friends will therefore anticipate their requirements as far as possible.

Messrs. F. Newbery and Sons, 27 and 28, Charterhouse Square, London, E.C., desire to inform their customers that their establishment will be closed on Thursday, June 26, and Friday, June 27. Urgent orders will be despatched on Saturday, June 28, up to 1 p.m. only. The firm will feel obliged if their friends will, as far as possible, send orders for their requirements previous to these dates.

W. Martindale's Price List.—A distinct novelty in price lists is being sent out by the firm of W. Martindale, 10, New Cavendish Street, London, and should, by its very appearance, attract the attention of everyone who sees a copy. The cover is artistically arranged, with a branch of *Erythroxylon coca* stretching across the page, and a "life-size" representation of the 'Extra Pharmacopœia' in the middle, the whole being printed in the correct colours. The list itself is divided into four parts. The first part includes chemicals and galenicals, including a great number of substances which are rarely quoted in price lists, though chemists frequently desire to know where they can be obtained. The second part is a list of Martindale's specialties, and the third is devoted to surgical sundries, such as bandages, gauzes, dressings, etc. The last part of the price list gives the terms for chemical and bacteriological analyses, and also includes particulars of general chemical and bacteriological apparatus, in addition to Martindale's special analytical apparatus. It will be seen, therefore, that the new price list is essentially one which should be preserved for reference.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Aitken, Alcock, Ashwin, Campkin, Cummings, Duncanson, Evans, Evans-Jackson, Forrest, Gillman, Harrison, Hill, Hobbes, Houghton, Hudson, Keinath, Kelly, Kenington, Kerr, Lee, Morgan, Pattinson, Pollard, Reynolds, Robbins, Robinson, Russell, Samuel, Smith, Thompson, Wilkins, Williams.

Pharmaceutical Journal

SATURDAY, JUNE 28, 1902.

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Assistants Wanted

Prepaid Advertisements under this heading are charged as follows :—Fifty words or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

LONDON, W.—Wanted a qualified Junior as Dispenser. —Apply to S. W. Ord, 3, Hanover St., Hanover Sq., W.

WANTED, Junior Clerk with one or two years' experience in office of Wholesale Druggist.—Address, Export, 64, Crutched Friars, E.C.

WANTED, by July 1, a qualified Assistant; outdoors; London experience; aged 25.—Allen & Hanburys (Limited), Plough Court, 37, Lombard St., London.

JULY 12th, qualified Assistant wanted as second hand; outdoor; salary 50/- per week.—Apply by letter, with full particulars, to Vines & Froom, 75, Aldersgate St., City.

LONDON, W.—Qualified Junior wanted for dispensing business; indoors.—Apply by letter, giving full particulars, to W. S. Glyn-Jones, 184, Temple Chambers, Temple Avenue, London, E.C.

CAPABLE, qualified Assistant (married) required to manage Branch.—State full particulars as to experience, age, height, references, salary required, and enclose photo, to Anderson & Virgo, Chemists, Worcester.

BALKWILL & CO. have a vacancy for a Junior Assistant; outdoor; one used to first-class Retail and Dispensing. —Apply, enclosing photo and giving full particulars as to height, &c., to F. W. Hunt, 106, Old Town St., Plymouth.

GREAT YARMOUTH. — Temporary Assistant wanted; indoor; qualified; partly to manage Branch; good references indispensable.—Apply, stating age, salary required, &c., to J. W. Huke, Chemist, 65, Regent Rd., Great Yarmouth.

CAPE COLONY.—Assistant, immediately. Must be single, possess the Minor qualification, about 25 years of age, and have had good experience in a country business. Also a good and neat Dispenser. Steady and sober habits indispensable. Salary, 1st year, £140 per annum; 2nd year, £150; 3rd year, £160. Sleeping accommodation provided, or equivalent (outdoors), but to find own board. Second-class passage paid out, conditional on a 3 years' agreement being signed.—Address, Cape, c/o Messrs. Evans, Lescher and Webb, 60, Bartholomew Close, London, E.C.

Assistants Wanted—Continued

CAPE COLONY.—Qualified Assistant; age about 24; good experience; smart and accurate Dispenser; three years' agreement; salary, first year, £13; second year, £14; third year, £15; room supplied; second-class passage paid.—Apply, with full particulars and references, to Cape, c/o Southall Bros. & Barclay, Ltd., Birmingham.

SHANGHAI.—Good Assistant required, to leave England early in September; must be healthy and strong; pure British descent; aged between 24 and 30; abstainer preferred; Protestant; unmarried; possess Minor qualification; of gentlemanly address and possess undeniable references; salary £10 per month first year; £11 second; £12 third; £13 fourth year; second-class passage paid; board and lodging provided; 4 years' agreement.—Address, Shanghai, c/o Messrs. Evans, Lescher and Webb, 60, Bartholomew Close, London, E.C.

PORT ELIZABETH. — Assistant required as quickly as possible; qualification not essential; must be energetic, well up in his business and have a knowledge of Photography; not over 25 years of age; salary for qualified assistant, 1st year, £15 per month; 2nd year, £16; 3rd year, £18. For unqualified Assistant, 1st year, £14 per month; 2nd year, £15; 3rd year, £16; outdoors; second-class passage paid out—Candidates, who must hold undeniable references, address, Port Elizabeth, c/o Messrs. Evans, Lescher & Webb, 60, Bartholomew Close, London, E.C.

TRAVELLING REPRESENTATIVES. — A London firm of Wholesale Chemists manufacturing Pharmaceutical Preparations invites applications for positions on its staff of Travelling Representatives in India, the Colonies, the Continent and Home districts; preference will be given to alert and energetic gentlemen with a good knowledge of Therapeutics and a fair acquaintance with Pharmacy; qualification by examination for the Medical or Pharmaceutical profession preferred, but not essential.—Fullest particulars as to age, experience, salary, etc., should be sent in writing to London, c/o Mather & Crowther, New Bridge St., E.C.

SOUTH AFRICA (healthy coast town).—At once, two qualified Assistants required, one for the Wholesale and the other for the Retail. Must be thoroughly reliable, competent, steady, and of sober habits; latter most essential. Scotchmen preferred; aged from 21 to 25; Minor qualification. For the Wholesale, the Assistant must have had previous experience. For the Retail, the Assistant must have had first-class Dispensing and Retail experience. Salary, 1st year, £13 10s. per month; 2nd year, £14 10s.; 3rd year, £15 10s.; without board and outdoor (sleeping accommodation provided, conditionally, for Retail Assistant). Second-class passage paid out, and allowance on board. Three years' agreement. — Address, South Africa, Messrs. Evans, Lescher & Webb 60, Bartholomew Close, London, E.C.

Engagements Wanted

Prepaid Advertisements under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word.

COMPETENT Assistant or Manager; disengaged.—Jones, Post Office, 177, York Rd., Islington, N.

TEMPORARY or otherwise; abstainer; good reference.—Pharmacist, 107a, Aslett St., S.W.

UNQUALIFIED; 23; tall; good Dispensing experience.—Spatula, 35, Park Rd., Redditch, Worcestershire.

MANAGER of Branch or Locum; qualified; good references; disengaged 24th.—J. S., 313, High St., Stratford.

LOCUM; Dispenser (Lady); qualified; disengaged except August.—Iodol, Pharm. Journal Office, 8, Serle St., W.C.

QUALIFIED; 23; 5 ft. 10 in.; outdoors; under qualified directorship only.—Williams, Penberthy, Hayle, Cornwall.

Sale and Exchange Column

Prepaid Notices under this heading are charged as follows:—Twelve words or less, 6d. Each additional twelve words or less, 6d.; two figures or two initials counting as one word. They must not partake of the nature of ordinary advertisements.

WANTED.

Platinum; disused utensils and scraps.—P. Rowsell, 9, Derwent Grove, Dulwich.

Shopfittings, shelving, dispensing screen.—State full particulars for cash, Higgs, Chemist, Kingston, S.W.

"**Yearbook of Pharmacy,**" 1864 to '67, 1876, '78, '80, '81, '82, '95, '96, 1900, 1901, also an entire set from 1864 to 1901; also any volumes or parts of Journal Chem. Soc. Analyst, Journal Soc. Chem. Industry, Chemical Gazette and Chemical News. Offers to Literary, Pharm. Journal Office, 8, Serle St., W.C.

OFFERED.

Photographic Mounts.—500 assorted job slip-in mounts, 10s.—Edward Peck, East Dereham.

Balance, by Becker, as new, in glass case, £1 5s.; sensitive to one milligram; also Maisch's Materia Medica, 5s.—A. W. N., Post Office, Bell Green, S.E.

Magic Lanterns (second-hand) and effects; £2,000 worth; bargains. Marvellous pamphengos oil lantern pictures, like limelight, reduced to £3 10s. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Illustrated list, 3d. Cinematographs, Hughes' Photo Rotoscope attachment, £7 7s.; Acetylene Outdoor Theatre; 14 can see at once; £12 12s.; coins money; pays grandly for itself in a week. Illustrated Catalogue, 5d. free; 60,000 slide lists, 7d. free.—Hughes, specialist, Brewster House, 82, Mortimer Rd., Kingsland, London, N.

CHEMISTS WHO WISH
to make Up-to-date Improvements, Alterations, &c., would do well to consult

H. MILLS, Shopfitter, Shop Front Builder, &c.
Works: 63-165, OLD STREET, LONDON, E.C.

CHEAP HOUSE for Window Enclosures, Drug Fixtures, Wall Cases, Dispensing Screens, Glass Facias, Stall Plates, &c.
Chemists fitted complete. Estimates Free.

Shop to Let

CHEMISTS.—Splendid opening.—No. 572, High Rd., Leytonstone; handsome shop, with private entrance, 9 exceptionally comfortable dwelling-rooms, very long garden, back entrance, &c.; frontage, 20 feet, depth 156 feet; electric light and other fittings; rent £50 (worth £70).—Mr. Bacon, 25, Liverpool St., E.C.

CHEMISTS' TRANSFERS.

ORRIDGE & CO.,

56, LUDGATE HILL, E.C.

MESSRS. ORRIDGE & CO., Chemists' Transfer Agents, may be consulted at the above address on matters of SALE, PURCHASE, and VALUATION.

The Business conducted by Messrs. Orridge & Co., has been known as a Transfer Agency in the advertising columns of the Pharmaceutical Journal since the year 1846, and is well known to all the leading firms in the Trade.

VENDORS have the advantage of Messrs. O. and Co.'s direct attention and advice as to value without any additional fees.

PURCHASERS.—Applicants are invited to forward a statement of their requirements, which will be notified **free of charge** in a classified register kept for that purpose.

VALUATIONS.—Valuations having always been a prominent feature, Messrs. ORRIDGE & CO. trust that the **lengthened period** during which they have enjoyed the confidence of the profession will be regarded as a sufficient proof of the sincerity of their endeavours to conduct these transactions in an **honourable** and **straightforward** manner.

Terms for Valuation on application.

THOMAS TOMLINSON & SON

Chemists' Transfer Agents and Valuers,
9, NEW CANNON STREET, MANCHESTER.

VENDORS saved time and trouble by consulting before offering for sale PURCHASERS supplied with suitable and reliable businesses. No charge to Purchasers. *Telegraphic Address,* "Tomtom."

Messrs. BERDOE & CO.

Expert Stock-takers & Valuers

Stock-taking is a necessity, and we undertake the work at the smallest possible cost, and guarantee not to upset the routine of business in the slightest degree. Terms on application. Businesses sold, valued and investigated. Note the address:—

35, JEWRY STREET, FENCHURCH ST., CITY

Businesses for Disposal

Prepaid Advertisements under this heading are charged as follows:—Fifty words, or less, 3s. 6d.; each additional ten words, or less, 6d.; two initials or two figures counting as one word.

IMMEDIATE Sale (death vacancy) old-established Business in busy part of Leeds; house attached; rent low; lately been neglected; capable of great increase; Dispensing and Prescribing; fairly good stock; £500 required.—For particulars apply to W. E. Barrett, Roundhay, Leeds.

£300.—Light Retail, Despensing, and Prescribing Business; South of England; purely Drugs, no patents; established 18 years; no opposition; capable of great extension; owner retiring; excellent house; low rent; or freehold may be purchased on easy terms; golden opportunity for a beginner.—Antepas, Pharm. Journal Office, 8, Serle St., W.C.

RECOGNITION OF SPECIMENS.*

Classification of the U.S. Pharmacopœial Galenicals.

Emulsions (or Mixtures). (Type, emulsion of ammoniac.)

Characteristic Odour.

White.—Emulsion of ammoniac, emulsion of almonds, syrup of almonds, chalk mixture, emulsion of asafetida, emulsion of chloroform, ammonia liniment, and lime liniment.

Yellow.—Glycerite of yolk of egg.

Green.—Compound iron mixture.

Brown or Reddish Brown.—Compound mixture of glycyrrhiza, mixture of rhubarb and soda, ferric hydrate, and ferric hydrate with magnesia.

Ointments—White. (Type, ointment of zinc oxide.)

Benzoin Odour.—Benzoinated lard, ointment of potassium iodide, ointment of zinc oxide, ointment of ammoniated mercury, ointment of lead carbonate, ointment of veratrine.

Characteristic Odour.—Ointment of carbolic acid, ointment of rose water, oleate of veratrine, oleate of zinc, cerate, camphor cerate, spermaceti cerate, and cerate of lead sub-acetate.

Yellow. (Type, sulphur ointment.)

Benzoin Odour.—Ointment of tannic acid, ointment of lead iodide, nutgall ointment, ointment of yellow mercuric oxide, and sulphur ointment.

Characteristic Odour. — Ointment, resin cerate, diachylon ointment, ointment of mercuric nitrate, iodoform ointment, and oleate of mercury.

Reddish Brown. (Type, iodine ointment.)

Ointment of red mercuric oxide, chrysarobin ointment, iodine ointment, tar ointment, and stramonium ointment.

Blue.—Mercurial ointment.

Green.—Ointment of belladonna and cantharides cerate.

Masses or semi-solid bodies.

White.—Mucilage of tragacanth.

Yellow.—Turpentine liniment.

Reddish Brown.

Characteristic Odour and Taste.—Confection of rose and mass of copaiba.

Green.—Mass of ferrous carbonate and soft soap (green to red). Purified ox gall.

Blue.—Mass of mercury.

Black.—Confection of senna.

Powders—White. (Type, antimonial powder.)

Odourless.

Effervescent when Moistened.—Effervescent citrated caffeine, effervescent lithium citrate, effervescent magnesium citrate, effervescent potassium citrate, and compound effervescing powder.

Characteristic.—Antimonial powder, trituration of elaterin, and citrated caffeine.

Odour. (Type, compound chalk powder.)

Characteristic.—Saccharated pepsin and compound chalk powder.

Yellow to Grey. (Type, powder of ipecac. and opium.)

Odourless.

Mercury with chalk.

Odour.—Saccharated ferrous carbonate, saccharated ferrous iodide, compound powder of glycyrrhiza, powder of ipecac. and opium, compound powder of morphine, compound powder of rhubarb (pink tinge when old), compound powder of jalap.

Reddish Brown. (Type, aromatic powder.)

Characteristic Odour and Taste.—Compound extract of colocynth, deodorised opium and aromatic powder.

PHARMACEUTICAL SOCIETY OF GT. BRITAIN.

OFFICIAL NOTICES.

CORONATION VACATION.

In consequence of the postponement of the Coronation the Society's Premises will not be closed on June 26th, 27th and 28th, as previously announced.

LIBRARY IN LONDON.

The Library in London will not be open in the evenings on Thursdays until October.

LIBRARY CATALOGUE.

Members or Student-Associates desirous of obtaining a copy of the new edition of the Library Catalogue (published in 1901) should make application to the Librarian, 17, Bloomsbury Square, London, W.C.

NOTES IN PARLIAMENT.

Museums and Gardens.—Mr. Cremer asked the First Commissioner of Works on Monday last whether, in order to increase the interest taken in horticulture, foreign shrubs and trees, by the visitors to Kew Gardens and the public parks, he would issue instructions that the practice of labelling flowers, shrubs, and trees in Latin should be discontinued, and English substituted; or, if the present method was continued, he would issue instructions that side by side with the Latin description the name should appear in English, and whether he would see that the same rule was applied in all our national museums. Mr. Akers-Douglas answered that he would be pleased to consider the hon. member's suggestion, and he had asked for the observations of the Director of Kew Gardens upon it. He had no objection to call the attention of the Trustees of the British Museum to the question, but he had no authority over their management of their museums.

Postage on Invoices.—On June 16 Mr. H. C. Richards asked the Secretary to the Treasury, as representing the Postmaster-General, if his attention had been called to the complaint of Messrs. May, Roberts, and Co., of 9 and 11, Clerkenwell Road, E.C., that they had been surcharged on invoices enclosed in halfpenny wrappers, as an insufficiently stamped letter, because one item of description on the invoiced goods was marked with a cross (see *ante*, p. 526), and such cross so added was treated in the manner of a communication, and not in accordance with the Treasury warrant, while the words "Lines marked X the goods are to follow, and will be procured as soon as possible, and sent with the next order unless customers instruct us to the contrary" are permitted to pass at the ordinary rate; and, seeing that the words "To follow," on an invoice under the head of conveyance, are surcharged, whilst the words "To follow by Sutton" or "To follow by Pickford" are permitted at the halfpenny rate, whether he will give directions to the postal authorities to discontinue the practice, which causes delay, of opening the postal packets of this firm in transmission, especially when posted in their private letter-box. The answer to the foregoing was to the effect that the Postmaster-General is aware of the circumstances of the case of Messrs. May, Roberts, and Co., and holds that the invoices referred to were correctly surcharged on a proper construction of the Treasury warrant. As regards the latter part of the question, it was necessary to examine packets passing through the post at the halfpenny rate of postage in order to check any infringement of the regulations, and the Postmaster-General sees no reason for exempting the firm in question from the operation of a regulation which applies to everyone else.

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* From the *Alumni Report.* Concluded from the *P.J. Inset* of June 7, 1902, page 17*a*.

Appointment of an Agricultural Science Lecturer.—On June 23 Mr. Young asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that Mr. Patrick O'Reilly, after filling the position without complaint of teacher of mathematical and land surveying at the Albert Model Farm, Glasnevin, was in October, 1901, discharged from the post; and seeing that in March last a mathematical teacher was appointed, and Mr. O'Reilly applied for the post, offering to compete for it by examination, and that a teacher named Stephenson was appointed without competition or advertisement, whether he would explain why Mr. O'Reilly's claim to the position was passed over. Mr. Thomas O'Donnell also asked a similar question, and in reply the Chief Secretary stated that the teaching of agricultural chemistry was formerly supplied to the institution by means of lectures only, and there was no teaching of physics, both being subjects which the new department considers most essential to have taught practically. Mr. Stephenson, who has hitherto been Lecturer in Agricultural Chemistry and Physics in the Agricultural Department of the Yorkshire College, Leeds, and is a highly trained agricultural scientist, is now teaching those subjects at the Albert Institution as well as mathematics. In the opinion of the department, Mr. O'Reilly was not qualified to give the new instruction required by the department.

SOCIETY AND ASSOCIATION NEWS.

Dundee Chemists' Assistants had a picnic at Monikie on Wednesday, June 11. The weather was not favourable, but as there is an excellent hall available in wet weather for teaing and dancing, an enjoyable afternoon was spent in the company of lady friends. Messrs. Robertson, McMillan, Lindsay, Barrie, Hardie, and Brebner had charge of the arrangements.

Edinburgh Chemists' Golf Club.—The third competition this year for the "Gibson Handicap Medal" was played over the Braids during last week, with the following result:—First, Mr. Geo. Robertson, 93 − 12 = 81; second, Mr. D. N. Wylie, 90 − 5 = 85; third, Mr. Jas. Stott, 85 + 1 = 86. Messrs. Duncan McLaren (96 − 5 = 91) and Mr. James Anderson (106 − 15 = 91) tie for fourth place. Eighteen members turned out.

North-East Lancashire Chemists' Association. — On Thursday, June 19, about thirty members of the Association, accompanied by their wives and friends, had their annual outing, Higher Hodder being fixed upon as the destination. The party chartered a char-à-banc and took the Wilpshire Road on the outward journey, returning through Mellor Brook. A substantial repast was partaken of at Higher Hodder, and a pleasant time spent in exploring the neighbourhood, several camera enthusiasts amongst the party finding themselves well occupied in the search for choice "bits" on which to "try a plate." The arrangements for the event made by the Hon. Secretary, Mr. G. B. Pickworth, were of a complete character, and the pleasure-seekers arrived back at half-past ten, well satisfied with the afternoon's experiences.

Blackpool and Fylde Chemists' Association.—A meeting of this Association was held on June 23, at the Palatine Hotel, Blackpool, Mr. H. P. Withers presiding. Amongst those present were Mr. F. Sankey (Hon. Sec.), Mr. T. Ashton (Hon. Treasurer), Mr. J. A. Buckley, Mr. Mayson, Mr. Boothroyd, and Mr. C. H. Turver. After the purely formal business the Secretary intimated the necessity for having some uniform system of closing on Coronation Day. After fully discussing, it was decided unanimously to open only between the hours of 12 and 1, and 7 and 9, Messrs. Sankey and Withers, assisted by Mr. Boothroyd, being appointed a deputation to interview as many as possible of those chemists not able to attend.

Three Towns' Junior Chemists' Association.—At the invitation of Mr. C. T. Weary, President of the Three Towns and District Chemists' Association, a party visited Mount Edgcumbe Park on Wednesday, June 18. Special permission having been obtained, Mr. Sandercock, steward to the Earl of Mount Edgcumbe, escorted the members through the orangery, Italian, French, tropical, and other private grounds, where the students had the opportunity of seeing many interesting trees and plants, including oranges, lemons, citrons, cacti, olives, acacias, cork trees, camphor, and eucalyptus trees growing in great profusion. The party then walked to Cawsand, and were entertained to high tea by Mr. Weary. On the proposition of Mr. E. J. Groombridge, seconded by Mr. Stancombe, a hearty vote of thanks was unanimously accorded to Mr. Weary for his kindness, and the members returned to Plymouth about 9.30 p.m.

Edinburgh Chemists', Assistants', and Apprentices' Association.—A summer meeting and botanical demonstration of the Association was held in the Pharmaceutical Society's House, 36, York Place, Edinburgh, on Wednesday, June 18, Mr. J. W. Plenderleith, President, in the chair. The meeting was devoted to the examination of plants collected by members of the Association, of which there were a large number, chiefly from the Colinton and Inveresk districts. From the railway bank at the latter place were the unusual plants *Anthemis arvensis*, var. *anglica*; *Poterium sanguisorba*, *Rœmeria hybrida* (a violet-coloured, horned poppy), *Valerianella olitoria*, *Pulmonaria officinalis* (the leaves not spotted), a *Vicia* like *Vicia sativa*, but with smaller leaves and a very dark purple flower, a composite like *Matricaria inodora*, but with smaller capitula destitute of ray florets, and some others. The plants were arranged systematically on the tables, in accordance with Bentham's 'Flora,' by Mr. Rutherford Hill, who gave a demonstration at 9.15 a.m. Special attention was directed to the reasons for the arrangement of the different plants, each genus and species was named and described, and attention called to such points as the irritable stamens in *Berberis vulgaris*, the mixed inflorescences in Compositæ and Umbelliferæ, the difference between the Scrophulariaceæ and the Labiatæ, the significance of plant names, the doctrine of signatures, etc. On the motion of Mr. Plenderleith, a vote of thanks was awarded to Mr. Hill, and the meeting then closed.

Royal Photographic Society.—At a meeting held on June 10, Mr. J. J. Vezey, F.R.M.S., in the chair, Professor Jagadis Chunder Bose, M.A., D.Sc., gave an interesting lecture on "The Strain Theory of Vision and of Photographic Action." The lecturer said that the latent image is by no means formed by the exclusive agency of light, but also by the stimulus of cathode discharge, of Röntgen rays, of emanations from such bodies as radium and uranium, and by electrical and mechanical stress. The electric wave which carries the wireless message through space is invisible light, and the detector (coherer) by which the message is received is nothing more than a photographic plate. The impact of light produces a molecular strain in the exposed substance, and the same molecular mechanism which produces the latent image on a plate actuates also the wireless telegraphic receiver and transmitted the visual impulse. An image capable of development is produced upon a photographic plate by electrifying a stencil placed upon it, the latent image caused by molecular strain being subsequently developed. Similar treatment of a plain sheet of glass also produces a change in the glass, which, though invisible in the ordinary way or under the microscope, is rendered visible by breathing upon the glass. A galvanometer needle moves in perfect response to the varying strain produced in the sensitive substance by the action of stimulus. Such a method of investigation of the changes induced by stimulus is superior to development, inasmuch as with the latter only the final effect is seen. The galvanometer, on the other hand, reveals through the agency of its needle all the invisible molecular disturbances which take place on the impact of light or other stimulus. Expressed by curves, there is thus the rise due to the action of the stimulus and the fall produced by the after-recovery from the strain which followed the impact of the stimulus. The curve of response to the stimulus employed, depending on molecular distortion and recovery from the strained condition, is influenced by the important factor of molecular friction. Thus, assuming a sphere depending from a wire to represent a molecule, it was demonstrated that a blow produced a distortion or strain, which was indicated by a pointer. As there was no friction, a persistent after-oscillation was set up, but if sand were used to produce friction upon the sphere, the oscillation was damped. The response to the stimulus of the blow was seen as before, but the recovery from the strained state was protracted, and the more so with the increase of friction, until there was response, but no recovery, the suspended ball being held in its strained position. Now, if conductivity variation produced by radiation is an expression of molecular distortion, these phases should be repeated. Nearly all substances are molecularly affected by radiation; yet there is great difference in the permanence of the after-effect, recovery being very quick in some cases, though protracted in others. Thus it is obvious that attempts to develop the after-effect a long time after the exposure will not be successful in cases where there is a quick recovery. The relapse of the invisible photographic image is explained by this theory, recovery being only a question of time. With some substances it is immediate, while with others, like Daguerreotype, the latent image disappears in the course of several hours. Instances have been brought to notice where the latent image on a film has disappeared after a year or so, the film afterwards becoming as good and serviceable as though it had never been exposed. The after-effect can be made more permanent by retarding self-recovery. The application of the theory to muscle, nerve, vegetable matter, metals, and other substances was then explained, galvanometer-curves being employed to illustrate the course and variation of the stimulus and its effect. The electrical theory of vision was the subject of particular reference, and many natural effects in the eye were explained by the lecturer.

SCHOOL AND COLLEGE NEWS.

Manchester College of Pharmacy.—Mr. W. Rothwell, of Bolton, was awarded a prize of books for securing the first place in theoretical work at an examination held at this college, and the medal which is given for the best analytical work was awarded to Mr. S. H. Walton, of Didsbury.

Imperial College of Pharmacy.—On Monday, June 23, the students of this College visited Kew Gardens. After viewing the various conservatories with especial reference to the economic house, agaves, aloes, palm houses, and tree ferns, etc., an adjournment was made and tea partaken of, the party then dispersed, having profitably and enjoyably occupied the time.

Metropolitan College *v.* Muter's College.—The above teams met at Nunhead last Saturday to play the return cricket match, and, after an exciting finish, Muter's ran out winners by 3 runs. Scores:—Metros, 54; Muter's 57. The chief scorers were:—For the Metros: Kendal 12, Buxton 10; for Muter's: Creasy 16, Turner 11, Mr. Armstrong 10. The previous match ended in a win for Muter's by a single run.

London College Cricket Club.—The short cricket season of the above club was brought to a conclusion on Saturday last, by a match at Nunhead, Mr. Wootton's XI. *v.* Minor Students. Mr. Wootton had got together a team consisting principally of Major students and demonstrators; great interest was evinced in the result of the match, which terminated in a victory for the Minor Students by 10 runs. Throughout the game the bowlers showed marked superiority over the batsmen. Messrs. Hands and Woodhouse for the Minor Students, and Messrs. Fry and Carr for the XI., doing great execution. Scores:—Mr. Wootton's XI., 32; Minor Students, 42.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. R. G. Eacott, of the Leeds College of Pharmacy, on June 21, at the famous Huddersfield Athletic Festival, where G. W. Smith, the New Zealand champion hurdler, won the 300 yards hurdle race in 39 2/5 secs., captured the "Thomas Holliday" Challenge Shield in a race over the same distance, the time being 41 4/5 secs. A handsome gold medal is given each year with the shield, the latter being held for one year. Mr. Eacott has just returned from Alassio, Italy, where he has been two seasons at the Farmacia Gentile, Via Umberto I. The "Holliday" Shield is given by Mrs. Thomas Holliday in commemoration of her late husband, a member of the firm of Read, Holliday, and Co., chemical manufacturers, of Huddersfield.

Lieut.-Colonel Clifford Probyn, the pharmacist Mayor of Westminster, and Mrs. Clifford Probyn gave a garden party on Monday, June 23, at the Royal Botanical Gardens, Regent's Park, to celebrate the Coronation. Brilliant weather favoured the proceedings, and among the distinguished company present were many foreign and Colonial guests, the Agents-General for the Colonies, Earl and Countess Roberts, the Earl of Onslow, Lord Peel, Lady Northcote, Lord Dungarven, Lord Glenesk, Lord Frederick Fitzroy, Lord Kinnaird, Lord and Lady Strathcona, Judge Lushington, the Lord Mayor and Lady Mayoress, and most of the Mayors and Mayoresses of the Metropolitan Boroughs, Sir Thomas Roe, Sir Thomas Wrightson, Sir James Blyth, Sir Christopher Furness, Sir Myles Fenton, Sir Henry Knight, Sir David Evans, Miss Irene Vanbrugh, and Miss Mary Moore. The guests altogether numbered 3,000, and a pleasant afternoon was spent in the beautiful grounds.

TRADE NOTES AND NOVELTIES.

Iron-Ox Tablets.—In connection with Iron-Ox Tablets, which are offered as a remedy for indigestion, constipation, and as a nerve tonic, the Iron-Ox Remedy Company, Limited (a Canadian company), of 20, Cockspur Street, Trafalgar Square, S.W., are issuing a circular to the chemists of Great Britain and Ireland directing attention to their tablets, and offering special terms to those who will assist in bringing them before the public. The tablets are nicely finished, neatly packed in a dainty aluminium box, and are sold at 1s. per package.

Quinine Salts.—Mr. Max Philipon writes to state that the prices of "F & G" brand of quinine salts have been reduced as follows: Quinine bi-sulphate, 1s. 1d. per oz., less 3 per cent., 14 days; quinine citrate, 1s. 6d. per oz., less 3 per cent., 14 days; quinine hydrobromate, 1s. 5d. per oz., less 3 per cent., 14 days; quinine hydrochlorate, 1s. 5d. per oz., less 3 per cent., 14 days; quinine lactate, 1s. 6½d. per oz., less 3 per cent., 14 days; quinine phosphate, 1s. 7d. per oz., less 3 per cent., 14 days; quinine salicylate, 1s. 5d. per oz., less 3 per cent., 14 days; quinine tannate, 1s. per oz., less 3 per cent., 14 days; quinine valerianate, 1s. 8d. per oz., less 3 per cent., 14 days. Other salts in the same proportion. The above prices refer to 100-oz. tins, other packages at the usual rates.

A New Order of Merit has been instituted by the King, and the first appointments thereto are Field-Marshal Earl Roberts of Kandahar, K.G., K.P., V.C., Field-Marshal Viscount Wolseley, K.P., G.C.B., General Viscount Kitchener of Khartoum, G.C.B., G.C.M.G., Lord Rayleigh, F.R.S., Lord Kelvin, G.C.V.O., F.R.S., Lord Lister, F.R.S., Admiral of the Fleet the Hon. Sir Henry Keppel, G.C.B., the Right Hon. John Morley, M.P., the Right Hon. W. E. H. Lecky, M.P., Admiral Sir Edward Hobart Seymour, G.C.B., Sir William Huggins, K.C.B., P.R.S., George Fredk. Watts, Esq., R.A. His Majesty has also been pleased to institute a new decoration for members of the Civil Service of the Empire, to be conferred after long and meritorious service, and to be known as the Imperial Service Order. There is a long list of new peers, baronets, and knights, the appointments approved by the King as Coronation honours having been duly gazetted in spite of the postponement of the Coronation itself. Lords Lister and Kelvin are appointed Privy Councillors; Sir Francis Laking, Sir Thomas Lipton, and Sir Frederick Treves receive baronetcies of the United Kingdom; while the honour of knighthood is conferred upon Messrs. F. C. Burnand (editor of *Punch*), J. W. Collins, M.D., L.C.C., Alfred Cooper, F.R.C.S., Halliday Croom (President of the Royal College of Surgeons, Edinburgh), Thomas Dewar, A. Conan Doyle, M.D., Thomas Fraser, F.R.S., M.D. (President of the Royal College of Physicians, Edinburgh), Victor Horsley, F.R.S., F.R.C.S., H. G. House (President of the Royal College of Surgeons), Oliver Lodge, F.R.S., Arthur Rucker, F.R.S. (Principal of the University of London), and many other men of note. The new knights commanders of the Bath include Sir William Church, Bart. (President of the Royal College of Physicians), Professor William Ramsay, and Mr. Leslie Stephen.

Calendar for July, 1902.

Day of		Events of the Month.	Sun	
M	W		Rises	Sets.
1	Tu	Pharm. Soc. G.B., Finance and other Committees.	3.48	8.18
		Last Day for Receiving Herbaria for Competition.		
2	W	Pharm. Soc. G.B., Meeting of Council at 11 a.m.	3.49	8.18
		Pharm. Soc. of Ireland, Meeting of Council, at 3 p.m.		
3	Th	Leibnitz born, 1646.	3.49	8.18
4	F	Hawthorne born, 1804.	3.50	8.17
5	S	"Still" Licences Renewable.	3.51	8.17
6	**S**	***Sixth Sunday after Trinity.***	3.51	8.16
7	M	Royal Institution, General Meeting, at 5 p.m.	3.52	8.16
8	Tu	Rt. Hon. J. Chamberlain born, 1836.	3.53	8.16
9	W	Pharm. Soc. G.B., Library, etc. Committee.	3.54	8.15
10	Th	Final Exam. of the Old "Preliminary Series," 1900.	3.55	8.14
11	F	Inauguration of Chevreul Monument, 1901.	3.56	8.13
12	S	Judgment of Court of Appeal in Armson's case, 1894.	3.57	8.12
13	**S**	***Seventh Sunday after Trinity.***	3.58	8.11
14	M	Sale of Poisons (Ireland) Act, passed, 1900.	4.0	8.11
15	Tu	St. Swithin.	4.1	8.10
16	W	Sir Joshua Reynolds born, 1723, died, Feb. 23, 1792.	4.3	8.9
17	Th	Sir Frederick Abel born, 1827.	4.4	8.8
18	F	De la Rue and Secchi first used photography in eclipses, 1860.	4.5	8.7
19	S	Eclipse of sun, 418 A.D.	4.6	8.6
20	**S**	***Eighth Sunday after Trinity.***	4.7	8.4
21	M	A. J. Mundella died, 1897.	4.8	8.3
22	Tu	Judgment of House of Lords in London and Provincial Supply Association case, 1880.	4.10	8.2
23	W	Wolverhampton Chemists' Association, Excursion.	4.11	8.0
		Merchandise Marks Act passed, 1887.		
24	Th	Last meeting in London of B.P. Conference, 1900.	4.12	7.59
25	F	Pharmacy Act (1898) passed.	4.14	7.58
26	S	Carbolic Acid Scheduled under the Pharmacy Act, 1900.	4.15	7.56
27	**S**	***Ninth Sunday after Trinity.***	4.16	7.55
28	M	Nux Vomica Scheduled under the Pharmacy Act, 1882.	4.18	7.54
29	Tu	Poisoned Flesh Act passed 1864	4.19	7.52
30	W	British Medical Association at Cheltenham, 1901.	4.21	7.51
31	Th	Pharmacy Act (1868) passed.	4.22	7.50

Note.—Secretaries of societies and local pharmaceutical associations are requested to send early intimation of forthcoming meetings, in order that notices may be included in this column and so prevent possible clashing of dates when arrangements are being made for other meetings. Fuller information about forthcoming meetings will usually be found in the "Diary of the Week."

PUBLICATION RECEIVED.

The Key to Sight Testing: A Supplement to 'The Practical Optician's Guide.' By Harry L. Taylor and William S. Baxter. Pp. 355. Price 7s. 6d. (subscribers 6s.). Birmingham: J. and H. Taylor, 54, Tenby Street North. 1902. From the Publishers.

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MARKET REPORT.

The Usual Market Report does not appear in this week's Journal, there being but little of importance to record, owing to the dislocation of business caused by the Bank Holidays and the King's illness. Quinine is twopence per ounce lower in first hands, and there is a reduction of one shilling and fourpence per pound in the price of phenacetin for home consumption. The prices obtained at the London cinchona auctions on Tuesday were about 15 per cent. lower than those recorded at the previous auction. Arsenic, shellac, and nitrate of soda are lower, while cream of tartar and juniper berries are higher. Other prices are practically as reported last week.

DEATH.

Schacht.—On June 24, at Stafford House, Ballard's Lane, Finchley, William Schacht, late of 26, Finsbury Pavement, E.C. Funeral at Abney Park Cemetery on Saturday, 28th inst., at 1.30 o'clock.

MARRIAGE.

Sturton—Skelly.—On June 19, at Christ Church, Brondesbury, N.W., by the Rev. C. Dale Williams, Samuel A. Sturton, pharmaceutical chemist, 9, Goldhawk Road, Shepherd's Bush, to Lily Skelly, of Brondesbury.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Alcock, Antcliffe, Brown, Butcher, Carter, Davis, Dibley, Duberley, Eacott, Forrest, Golden, Hill, Holford, Jones, Kinsman, Matz, Morgan, Mortimer, Nelson, Rackham, Roberts, Ruoff, Scott, Simpson, Stedman, Taylor, Thomas, Tuck, Turner, Turver, Umney.

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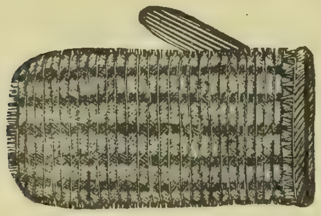

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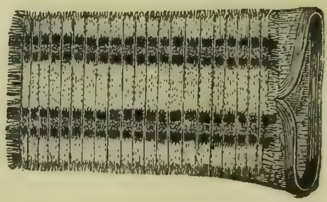

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